AN ECOLOGY OF E-LEARNING: A FRAMEWORK TO GUIDE THE STUDY OF INFORMAL SELF-DIRECTED LEARNING IN WEB 2.0 ENVIRONMENTS

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ABSTRACT

The intent of this research is to create a qualitative framework to guide perceptions and observations about informal self-directed learning in the arena of contemporary Web 2.0 e-learning. Drawing influence from the studies on self-directed learning conducted by Allen Tough and his associates, the writings on educational connoisseurship and criticism by Elliot Eisner, as well as research and literature about contemporary e-learning contexts, this exploratory study is comprised of a hermeneutic analysis that seeks to discover themes, patterns and points of intersection in these three areas. The analysis presents the application of the resulting framework to three illustrative scenarios, constructed from ideas and themes drawn from the major elements of the study, and discusses the findings revealed by the investigation. The study concludes with reflection and recommendations for application and further research.

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CHAPTER ONE: INTRODUCTION

Setting the Scene

Information and Communications Technologies, or ICTs, represent a wealth of potential for learning. Many people have access to information, knowledge and resources from all over the world from the comfort and convenience of their own homes. There is a body of research that deals with how and where North Americans are accessing, creating, sharing, and storing information through the Internet and other computer technologies (Anderson & Wolff, 2010; Canadian Council on Learning, 2009; State of E-Learning in Canada, 2009; Veenhof, 2006; Zamaria & Fletcher, 2006). There have been a number of government funded and private studies examining at how people are accessing information, and what kind of information they are accessing (Veenhof, 2006; Zamaria & Fletcher, 2007). Moving beyond formal research and surveys, one only has to go online to see the multitude of resources and options available for accessing, creating, and sharing information – ranging from digitized versions of traditional formats like books and journal articles, through to socially constructed knowledge repositories like Wikipedia, to online learning forums and communities, to informally published works like blogs and online journal entries. Indeed, these new tools and resources are evidence of a recent shift in online learning. Resources are no longer static and centrally located. Instead, there has been a shift to web-based, interactive open services and social media networks. Users no longer simply consume information; they create it as well.

In the course of accessing and interacting with all this information, people are learning something, whether intentionally or incidentally. This assumption has become so well recognized that the term "e-learning" (also "elearning" or "eLearning") is used to describe learning that is facilitated through the use of computer technologies (Canadian Council on Learning, 2009a). However, "the role of technology in learning…is considerably more complex than simply assuming that the availability of ICTs will automatically result in learning" (Canadian Council on Learning, 2009a, p. 18). What kind of learning is taking place? Is it effective? Why are learners choosing to learn this way?

Online, learners are choosing how, what, and where they learn outside of formal educational institutions and curricula. This degree of learner control is a typical characteristic of autodidaxy, or "the self-directed learning which takes place outside formal institutional settings" (Candy, 1990, pp. 12-13). Indeed, interest in informal self-directed learning (IFSDL) has been gaining momentum since the 1960's and continues today. Educators and learners alike are more aware of the possibilities for self-directed learning, and there are increasing social and societal incentives to take learning into one's own hands. Research indicates that employment and workplace related learning is the most common type of informal self-directed learning taking place (Livingstone, 1999, p. 2; Canadian Council on Learning 2009b, p. 51). In times of economic stress and rapidly changing workplaces, many people are learning on their own to keep up, and to get ahead (Livingstone 1999, pp. 2-3). Technology itself is another major arena for IFSDL – with new technologies, software, and tools being introduced at a rapid rate, many are continually learning to keep up. As well, health, household related learning, and leisure activities continue to be popular topics for those learning on their own (Livingstone, 1999, pp. 3-4; Silver et al., 2001, p. 20).

As early as the 1980's, researchers acknowledged that environmental determinants may have a major impact on self-directed learning (Spear and Mocker, 1984; Rager, 2006). Many agree that ICTs, particularly the Internet, are influencing the way people learn, but the nature of that influence and what it can tell us about learning remains elusive: the metaphor of "the iceberg" (Tough 1971, 1978, 1999; Brookfield 1981; Livingstone 1999, 2001) has been used to imply that the greater part of informal self-directed learning remains invisible. ICTs have made that unknown quantity even harder to see. Studies and papers invariably conclude with calls for further research (Brookfield, 1981; Livingstone, 1999; The Web-based Education Commission, 2000; Livingstone, 2001 & 2002; Candy, 2004; Fournier, 2006; Canadian Council on Learning, 2009). It has been acknowledged that "e-learning holds tremendous promise and potential, yet it remains a largely unexplored field" (Canadian Council on Learning, 2009a, p. 9). The focus of the

investigation of e-learning has shifted "from the technology and the infrastructure, towards the practice, the pedagogy, [and] the content" (Fournier, 2006, p. 37).

The impact of ICTs on learning could be making our existing knowledge of IFSDL obsolete, leaving a gap in our knowledge about an increasingly common and important type of learning. How do we close the gap? It is important to compare our existing knowledge about self-directed learning, and apply it to what we are beginning to learn about this new type of learning environment. One solution is to build on how informal self-directed learning been studied in the past.

Allen Tough and the Study of Informal Self-Directed Learning

Allen Tough drew widespread attention to the concept informal self-directed learning when he published the results of his studies in Learning Without a Teacher in 1967 and The Adult's Learning Projects in 1971. Since the original studies there have been over sixty replications (Tough, 1999), making this study a major influence in the way we understand this type of learning.

When first exploring the concept of self-planned or self-directed learning, Tough simply went out and talked to people about how they learn. Out of this experience, he gained a number of insights into how learners go about planning and undertaking learning on their own. From there, Tough developed a more empirically rigorous research design and interview schedule in order to document and report his findings (Donaghy, 2005, pp. 2-3). Since the original research, the study has been replicated many times, and has come under scrutiny from the research community, including questions about Tough's methodology (Brookfield, 1981) and ideas that expand on the original work (Spear & Mocker, 1984).

Tough's research on self-directed learning had two major foci: the decisions made by learners during the learning process, and the help they seek from others. As a parameter of the study, in order to identify "sustained, highly deliberate efforts to learn"

(Tough, 1979, p. 7) Tough identified the notion of the learning project. A learning project is a series of episodes in which the learner devotes a period of time to "gain and retain" some sort of knowledge or skill (Tough, 1979, p. 8). Related learning episodes are linked together in pursuit of a larger learning goal. In order to map these learning projects, participants were asked questions about how they plan their learning. Tough defined a series of key decisions that learners make when they are undertaking a learning project. These decisions include setting goals, locating and selecting resources, and planning learning activities. By and large, Tough's research implies a high degree of planning on the part of the learner, an idea that has sparked some debate – particularly around the question of environmental determinants of self-directed learning; that is, how much of a role the learners' environment plays, as opposed to assuming that the process is entirely a product of the learner's planning (Spear & Mocker, 1984; Rager 2006).

Educational Connoisseurship and Criticism

While Tough was developing his study, one of his contemporaries was exploring a different way of looking at learning. Elliot Eisner's work drew on his experience and background as an artist and arts educator to propose a way of studying and evaluating education that is inspired by the concept and practice of connoisseurship in the fine arts. Educational connoisseurship and criticism (ec&c) is a form of expert evaluation that relies on the observation of educational activities and processes in context. Educational connoisseurship and criticism is a qualitative empirical process wherein the observer (the connoisseur) observes and makes judgments about what he or she sees (Eisner, 1975, 1976, 1979, 1985, 1998). Educational connoisseurship and criticism is an approach that is intended to deal with highly complex phenomena that are difficult if not impossible to reproduce – making it ideal for observing and evaluating the ever-changing environment of the school classroom (Eisner, 1998, p. 66).

According to Eisner, the connoisseur is one who is highly perceptive in a particular domain – a state that arises from a combination of observational prowess, background knowledge, and previous experience. Educational connoisseurship, then, requires that one

be highly perceptive in the domain of education and its related ideas and processes: "They [educational connoisseurs] must attend to everything that is relevant for satisfying a specific educational aim or for illuminating the educational state of affairs in general" (Eisner, 1998, p. 71). While the perceptive abilities of the connoisseur are extremely important, so too is the existing knowledge he or she possesses. This "antecedent knowledge", consisting of theoretical information, previous experience and personal/social values, impacts how a phenomenon is perceived, as well as how it will be judged (Eisner, 1998). One of the vital characteristics of ec&c is that the onus of evaluation rests with the observer, rather than a set of externally defined criteria.

In order to share the connoisseurial process with others, the critic is defined as one who relays his or her perceptions and judgments in a language that is understandable by others. It is not a requirement for a connoisseur to have the ability to communicate his or her observations. The critic, on the other hand, must be a connoisseur in order to fulfill the function of criticism. The critic works to communicate observations, apply judgments, and give reasons for those judgments.

Inspiration for a Combined Approach

At first glance, it appears as though Tough's research on informal self-directed learning and Eisner's educational connoisseurship and criticism may be able to complement each other in important ways. This combination could, in turn, provide an effective and insightful format for the study of informal self-directed e-learning. When originally investigating self-directed learning, Tough relied on information gained through informal investigation and interviews. It was the fear of "not being taken seriously" that prompted him to develop the more structured research approach as described in Learning Without a Teacher and The Adult's Learning Projects (Donaghy, 2005, pp. 2-3). During this process of reduction, it is very possible that some nuances and insights into the informal self-directed learning process were lost, and not reflected in the final results of the study. The inclusion of elements from ec&c may help to reintroduce insight into the research process.

In contrast, there have been questions raised about the validity and reliability of educational connoisseurship and criticism as an approach for evaluating teaching and learning (Johnson, 1975; Robbins, 2006). Tough's methodology may provide ec&c with a sort of rudder, providing the guidance of a more systematic and empirically tested research design.

Beyond research approaches to studying informal self-directed learning, another key factor remains: in the intervening decades since Tough and Eisner published their original works, learning contexts have changed dramatically. Learners now have access to information and resources from all over the world, as well as advanced tools for the construction, organization and storage of knowledge, and communication. An investigation of contemporary learning contexts can help guide the development of an approach for a method of study that is appropriate for those contexts. The question guiding this research is: how can the work of Allen Tough and Elliot Eisner be applied to help deepen our understanding of informal self-directed e-learning in Web 2.0 environments?

Definitions

While one of the secondary outcomes of this research was to further examine the nature of informal self-directed learning and situate it in the context of e-learning, preliminary definitions are offered to guide the analysis. This list of definitions outlines the major elements of the research, and they play an important role in providing clear limitations to the study.

Informal Self-Directed Learning: Informal self-directed learning (IFSDL) is intentional, self-planned learning that takes place outside of formal educational institutions and programs.

E-learning: "E-learning" (also e-learning or elearning) distinguishes learning that is specifically facilitated through computer technologies.

Informal Self-Directed E-Learning: Informal self-directed e-learning is informal self-directed learning that is facilitated through computer technologies.

*Web 2.0: T*he term Web 2.0 has been coined to describe a series of characteristics that are representative of recent changes in the way we design and use the World Wide Web (O'Reilly Media 2009).

Educational Connoisseurship: Educational connoisseurship, a term coined by Elliot Eisner, refers to a form of expert evaluation that is modeled after the process of connoisseurship in the fine arts.

Educational Criticism: Applied in conjunction with educational connoisseurship, educational criticism is the expression of connoisseurial evaluation in a shared language.

Hermeneutics: The study of the theory and process of interpretation. For the purposes of this research, the term hermeneutics focuses more the process of interpretation (with the method being guided by a specific school of thought as described in the methodology section), rather than attending to the larger questions of interpretation as a whole.

Methodology of the Study

Three factors have been identified as major elements of this research: the contemporary learning context (e-learning), methods for studying informal self-directed learning, and the notion of educational connoisseurship and criticism as an approach for observing and evaluating learning. The analysis and interpretation in this research created, in essence, a hermeneutic circle comprised of these three elements. That is, in order to achieve a complete understanding, the parts were examined both individually and in relation to each other. This interpretive analysis revealed patterns, themes and areas of intersection, which were then applied to the construction of a framework for the study of informal self-directed e-learning.

Hermeneutics

Simply put, hermeneutics is the theory and technique of interpretation. While historically, the roots of hermeneutics lie in the interpretation of sacred texts, it has since been expanded to include human understanding in general (though the word "text" is still often used to refer to that which is being interpreted) (Gallagher, 1992, p. 7). The field of hermeneutics seeks to describe as well as guide the interpretive process. There are a number of different approaches to hermeneutics that revolve around the nature of interpretation and understanding. Gallagher (1992) describes four main schools of thought: conservative, moderate, radical, and critical hermeneutics. Conservative hermeneutics, described by Schleiermacher and Dilthey, maintains that the meaning of a text rests solely with the intention of the author and is a fixed thing; it is the task of the reader to understand exactly what it is the author meant (Gallagher, 1992, p. 9). Radical hermeneutics (Nietzsche, Heidegger) takes the meaning of a text away from the author entirely, and places it with the reader (Gallagher, 1992, p. 10). This approach is critical in nature, and leans more towards the process of deconstruction, whereby any meaning in the text is effectively eliminated. Critical hermeneutics, best described by the work of Habermas, seeks to emancipate meaning from its original socio-political restraints (Gallagher, 1992, p. 11). Moderate hermeneutics, which includes the work of Gadamer and Ricoeur, rests somewhere between the conservative and radical: the reader creates his or her own interpretation of the text, but still makes an effort to understand the author's original meaning and intent (Gallagher, 1992, pp. 9-10). This moderate approach to hermeneutics provides an appealing basis for an interpretation that values the intended meaning of original works while leaving room for a new understanding.

Interpretive Analysis and Intellectual Craftsmanship

Interpretation is, by its very nature, a highly subjective process. However, strategies do exist to guide interpretive analysis, and some of these strategies and ideas have played a role in guiding this body of research. In the interests of thoroughness, Klein and Meyers (1999) suggest a series of principles for the conduct of interpretive analysis. These

strategies include maintaining an awareness of a topic in relation to its social and historical context, and anticipating multiple interpretations and possible contradictions between research design and actual findings (Klien and Meyers, 1999, p. 72).

C. Wright Mills (1959) outlines a number of strategies for stimulating what he terms as the "sociological imagination". These are deceptively simple techniques that can uncover insights and provoke a shift in perspective through the rearrangement, comparison and grouping of ideas (Mills, 1959; Smith, 1999). Mills' work also stresses the importance of good research design and problem construction: "The most economical way to state a problem is in such a way as to solve as much of it as possible by reasoning alone" (Mills, 1959, p. 206). By carefully crafting and then examining the research problem in question, it moves us towards the creation of an "ideal design" that will allow for more effective empirical study.

Research Focus and Goals

The main goal of the research was to create a framework to guide the study of informal self-directed e-learning, suitable for contemporary learning contexts. This was achieved through the examination of previous and current theory and research approaches, viewed through the lens of contemporary learning contexts.

One potential benefit of the study is to build upon previous research. By using the work of Tough and Eisner as a basis, as well as examining the characteristics of contemporary learning contexts, this research aims to examine both approaches in terms of how they might complement and strengthen one another and in turn be adapted for application to current research in informal self-directed e-learning.

Educational connoisseurship and criticism is an approach that was originally developed for the study of formal classroom environments; this research helped further test these ideas and shape them for a new application. Tough's research focused on the processes of informal self-directed learning, but the research was designed and conducted

in a context that is in many ways, very different from the affordances of informal self-directed learning context today. This research tested and shaped Tough's ideas about informal self-directed learning to suit modern digital learning contexts.

Scope of the Study

Two specific bodies of research have been chosen as the basis for this work: the studies on self-directed adult learning conducted by Allen Tough and his associates, and the work on educational connoisseurship and criticism developed by Elliot Eisner. This researcher believes that these two bodies of work, in combination with an analysis of characteristics of current e-learning environments, contain elements that can be combined to create a framework suitable for the study of this type of learning. The works of Tough and Eisner have been chosen because both are well-established bodies of work, which each researcher has spent significant time developing. Both are described in depth in texts that serve as the primary basis for the literature review and subsequent hermeneutic analysis.

Validity of Interpretive Analysis

Several factors impinge on the research, which influences its trustworthiness, interpretation and application. First and foremost is that interpretive analysis, by nature is subjective. Similarly, the notion of expert-based evaluation is subjective, as it depends on the judgments the evaluator, rather than an externally defined set of criteria. The process of educational connoisseurship and criticism includes strategies for dealing with this challenge. These strategies are described in further detail in the literature review, but all revolve around the process of criticism as a shared language, and using that shared language to "re-educate the perception" of other viewers (Eisner, 1998, p. 85).

Delimitations of the Study

The major delimitation of this research has been the inclusion of constructed scenarios for analysis, rather than observed ones. There are two reasons for this decision. Firstly, the scenarios have been constructed as illustrative examples. Some of the most

ubiquitous and well-known Web 2.0 tools have been chosen, and paired with several common ideas and themes from self-directed learning literature. Secondly, the framework is intended to make use of information and ideas from a variety of sources, rather than relying exclusively on interviews (as in other self-directed learning studies).

Assumptions and Limitations of the Study

There is an important implication in the examination of e-learning in this study: the research focuses on the context in which I, the researcher, reside: a North American, middle-class existence, where the majority of citizens have access to formal and informal learning opportunities and resources of many types, and access to various technologies to facilitate that learning. This notion of access is also the major assumption of the research: in order to apply the framework to the study of informal self-directed learning, learners must have the means to pursue learning in this way. This is an exploratory study that can be later adapted to suit other global and cultural contexts.

Background and Role of the Researcher

In the case of hermeneutic analysis, particularly the dialogical hermeneutics described by Gadamer (Gallagher, 1992; Gadamer, 1998), the voice of the researcher/interpreter plays an active role in the interpretive process. According to this style of interpretation, the reading of a text is, in itself, an interpretation of the text. In other words, the biases of the interpreter can have a profound effect on the interpretation. However, these biases need not necessarily be negative. Indeed, these biases are in fact what construct new meaning from a text. As such, my viewpoint (my background/upbringing, prejudices, biases, etc.) becomes a tool for the research. Informal self-directed learning is being examined in relation to a contemporary learning context. I am embedded in, and in some ways, a product of that context through my life experiences. My personal experience with and investment in e-learning as an educator gives me both incentive and a basis for the study of such an environment. In contrast, my experience with the work of Tough and Eisner is quite different: this research was done decades before I was even born. Gadamer states, “The translator is often painfully aware

of his inevitable distance from the original" (1998, p. 386). My distance from the original work of Tough and Eisner is what makes a new interpretation of this material possible.

My background and lifelong involvement in the arts (visual arts, music, dance, etc.) has drawn my attention to the value inherent in artistic processes. I see the arts as a venue for learning about the world, and I believe that the arts have much to teach us about learning. I have also had the pleasure and privilege of knowing some very driven self-directed learners, people who have pursued knowledge on their own terms for enjoyment and self-improvement. As well, my experience as an educator in public institutions has exposed me to the joy and intensity present in informal learning. I have a long-term goal as a researcher, educator, and learner, to find improved ways of making learning on one's own not only effective, but also enjoyable. My background and experience creates natural biases towards to this type of research. I have a strong belief in the importance of this type of qualitative research, and I believe that it can (and should) be effectively applied to the realm of informal self-directed e-learning. Similarly, my personal experience with learning via the Internet leaves me with a belief that informal self-directed learning can, and does, occur.

Outcomes of the Study

Eisner (1998) identified a series "major dimensions of schooling" that make up important areas for observation and contemplation when considering learning environments. This framework makes reference to the specialized antecedent knowledge required to function as an educational connoisseur. This "ecology of schooling" (Eisner, 1988) is based on processes and structures of formal education; a product of this research was to identify major dimensions of and formulate an ecology of informal self-directed e-learning, comprised of theory, previous research, and contextual information that is potentially important to the study of this particular type of learning.

The major outcome of this research is the creation of a framework to guide the study of informal self-directed e-learning suitable for application to contemporary Web

2.0 learning contexts. The application of this framework is intended to provide suggestions and guidelines for further empirical studies, so that ideas about informal self-directed e-learning can be examined and extended.

Organization of the Thesis

The thesis is organized into five chapters. Chapter One provides a general introduction to the study, outlining the research background, goals, and methods. Chapter Two presents a literature review in the areas of e-learning, the methodology and results of the study of informal self-directed learning as developed by Tough, and the notion of Educational Connoisseurship and Criticism as described by Eisner. Chapter Three, the methodology section, outlines the methods of hermeneutic analysis employed in this research, and goes on to describe the structure of the framework. Chapter Four presents the application of the framework and analysis, constructed from ideas and themes drawn from the major elements of the study. Chapter Five provides summary conclusions and discusses avenues for further testing and research.

CHAPTER TWO: REVIEW OF THE LITERATURE

Introduction

The literature review focuses on the three major components of the study: the research on self-directed learning conducted by Allen Tough and his associates, the notion of educational connoisseurship and criticism (ec&c) as described by Elliot Eisner, and a survey of e-learning. The review is intended to provide a conceptual background for the creation of a framework that can be applied to the study of informal self-directed e-learning.

Literature has been selected according to the need to accurately describe and identify the salient characteristics of each component of the study. A selection of related work by other researchers, including replications, responses, criticisms, and extensions, has been included to further identify and clarify important ideas. Each major component has a surrounding constellation of origins and influences, related ideas, and derivative work. The potential pool from which to draw from is vast. However, in accordance with the scope of the research, the majority of the literature review focuses on two specific bodies of work: the research on learning projects conducted by Allen Tough and his associates, and the work of Elliot Eisner on educational connoisseurship and criticism. Both researchers have spent significant time on these respective bodies of work. In order to perform a hermeneutic analysis of these two elements of the study, it was preferable to focus on a small number of comprehensive descriptions of each body of work.

Tough published the results of his research in The Adult's Learning Projects (1969, 1971). This is, logically, the most comprehensive and detailed description of this work, and serves as the best basis for an interpretive analysis. Similarly, Eisner's writings on educational connoisseurship spanned the length of his career. This body of work is comprehensively detailed in the book The Enlightened Eye: Qualitative Inquiry and the Enhancement of Educational Practice (1998), and it provided a thorough description of the

ideas. An examination that focused mainly on these two major works allowed for the identification of patterns and areas of intersection.

The focus of e-learning in this research revolves around the Internet and the World Wide Web. Computers, cell phones and other mobile devices are all being used to access information available through the Web. The same infrastructures that are used to deliver information via the Internet are now being used to deliver voice data (digital telephony and VOIP services), and (digital) television, making different ICTs less distinguishable from one another, and the concept more fluid. Indeed, the ability to communicate between technologies and devices is one of the hallmark characteristics of Web 2.0 (O'Reilly Media, 2009; Rollett, Lux, Strohmaier, Dosinger, & Tochtermann, 2004). The literature review focuses on the characteristics of Web 2.0.

Allen Tough and the Study of Informal Self-directed Learning

In the late 60's and early 70's Allen Tough changed the way we conceptualize adult self-directed learning when he and his associates at the Ontario Institute for Studies in Education (OISE) conducted studies to examine the informal self-directed learning of adults. Tough found the inspiration for his work in self-directed learning as a PhD student in adult education, taking a class from Cyril Houle. Houle described a series of steps for program planning in adult education, and Tough found that the steps "fit very well" with self-directed learning situations (Donaghy, 2005, p. 1). The teaching tasks undertaken by adult learners, and the help or advice obtained by learners from others during the learning process, became the two major foci for the studies the results of which were eventually published in Learning Without a Teacher (1967) and The Adult's Learning Projects (1971, 1979). A survey of these two works reveals the progression of Tough's work, including refinements to the research parameters and process.

Structures of the Study

Tough and his associates defined a number of variables in their research. These definitions set the parameters for the studies, and allowed for a statistical analysis of the

results. The main definition, of course, had to describe what exactly was being studied. Tough's research focuses on what he calls as "highly deliberate efforts to learn" (Tough, 1979, p. 1). These highly deliberate efforts were described as learning projects. A learning project is a series of learning episodes, periods of time "devoted to a cluster or sequence of similar or related activities, which are not interrupted much by other activities", linked together (Tough, 1979, p. 7). Tough admits that the length of learning projects required for the study was largely arbitrary (a minimum of 7 hours within a six month period); but the intention was to focus on learning efforts that are comprised of "a significant amount of time" (Tough, 1979, p. 14).

Within the scope of the learning project, a major focus for the study was the "deciding and planning aspects of learning" (Tough, 1979, p. 5). Tough used the term "planner" to "refer to the person (or group or object) that does most of the detailed day-to-day planning in the learning project" (Tough, 1979, p. 77). This planner may be a person or non-human resource. A human planner may be a colleague, friend, or other person knowledgeable about a topic. A non-human planner may be a textbook, course or other media resource. This planner becomes a structure that helps to shape the learning process. This process is in turn made up of decisions made by the learner. Tough identified and described a number of preparatory steps undertaken by learners – inspired by the steps for program planning that Tough encountered when studying adult education with Cyril Houle (Tough, 1979). The specific steps identified by Tough are not relevant to this analysis, so they are not listed here, but his approach acts as evidence that Tough's study focuses on the *processes* of self-directed learning.

These structures – the learning project, the planner, and the preparatory steps, provide a framework from which the self-directed learning process can be examined. Tough and his associates interviewed learners using these structures as a guide for the investigation of learning.

The interview schedule

The device for data collection in Tough's research was the structured interview. A detailed interview schedule, comprised of a series of questions and prompts, was developed to obtain information from learners about their self-directed learning practices. The interview process depended entirely on what the learner was able to articulate about his or her learning process and experiences. This presented a certain degree of difficulty – many learners needed help in recalling their learning activities, simply because they were unused to thinking about learning as something they do on their own (Tough, 1971). The interview schedule included a series of prompts the interviewers could use to aid in the recall process (Tough, 1971).

Tough's 1970 survey included "small but careful samples" from specific populations, ostensibly intended to provide a varied cross-section of learners (Tough, 1971, p. 17). This included "blue-collar factory workers, women and men in jobs at the lower end of the white-collar scale, beginning elementary school teachers, municipal politicians, social science professors, and upper-middle-class women with preschool children" (Tough, 1971, p. 17).

A certain degree of expert evaluation was built into the survey instrument. In both versions, interviewers were asked to make judgment calls about participants' understanding of the questions asked, and the clarity of their responses: "Our study used extensive probing by interviewers who were thoroughly familiar with the study's purposes and definitions" (Tough, 1971, p. 18). Interviewers are asked to judge and categorize "on the fly", based on their existing knowledge of the research project and observations in the field. Here arises a potential weakness in Tough's methodology – the quality of the data (and consequently the results) depends on the skill and background of the interviewers; this was not made completely clear in his descriptions of the work.

The results

Tough drew a number of conclusions based on analyses of the results of his surveys. By comparing the variables in a number of ways, he was able to paint a picture of how self-directed learners go about learning on their own. The Adult's Learning Projects describes the results of this research. Tough was able to confirm the existence of learning projects, and that the adults in the study completed an average of eight learning projects per year, devoting on average between 700 and 800 hours to this effort (Tough, 1979, p. 18). Tough's second general finding confirmed that learners plan and seek help to learn. The 1970 survey indicated that the learner planned the majority of learning projects themselves (Tough, 1979, p. 86). Tough contended that more thoughtful (and specific) decision-making results in better learning. Being better at setting learning goals and objectives may result in initiating more learning ventures (1979, p. 64-65). In the second edition of The Adult's Learning Projects (1979), Tough notes four replications that made use of the 1970 interview schedule. These replications confirmed Tough's results (Tough, 1979, p. 22).

The replications

Since the initial studies, there have been over 60 replications of Tough's self-directed learning surveys (Tough, 1999). The ability to replicate the study, and conduct surveys of large sample sizes, could be considered a strength of this research—gathering information from many different types of learners allows for the analysis and comparison of different factors that may impact the success of self-directed learning . One of the first, largest, and most well known replications is a study conducted by Patrick Penland at Pittsburg University that focused on self-directed learning undertaken by adults in America (1977). This was a nation-wide (U.S.) survey conducted by the Opinion Research Corporation, and did not focus on any particular segment of the American population (Penland, 1977). The survey instrument was very similar to Tough's interview schedule, making use of similar if not identical scripts, and focused on the same elements: learning projects and episodes, learning organizers and helpers.

The most recently documented and largest replication of Tough's work has been the Canadian Survey of Informal Learning Practices, conducted in 1998 by the research network on New Approaches to Lifelong Learning (NALL) (Livingstone, 1999). This was a nation-wide (Canada) random phone survey, with a sample size of 1,562. Both the Penland and NALL surveys, likely due to the large sample sizes and interview format (via telephone), saw similar changes from the original survey instrument. Both were edited to be completed within a shorter period of time (1 hour for the Penland survey, 15-20 minutes for the NALL survey), in contrast to the 2-hour conversations that marked the interviews in Tough's research.

Responses

The popularity of Tough's work provoked a number of responses from the research community. One comprehensive analysis of Tough's research comes from Stephen Brookfield. In his article "The Adult Learning Iceberg: A critical review of the work of Allen Tough", Brookfield examines Tough's methods and discusses potential implications (Brookfield, 1981). One of his main criticisms concerns "the reliance on structured interviews" used by Tough and his researchers to reveal the learning habits of adult self-directed learners (Brookfield, 1981, p. 115). Citing the work of other critics (Pedler, 1972; Holmes, 1976), Brookfield (1981) implies that the structure and content of interview schedule may produce results that are more a reflection of what the researchers hoped to find.

The Organizing Circumstance

Perhaps one of the most interesting and potentially useful responses that arose from Tough's research regards the influence of environmental factors on the self-directed learning process. Described by Spear & Mocker in 1984, the "organizing circumstance" suggests that the self-directed learning process is strongly influenced by the learning environment (both social and material) in which the learner functions. This is somewhat contrary to Tough's results, which implied that there is a high degree of preplanning and conscious thought on the part of the learner throughout learning projects.

The organizing circumstance is a factor that has changed a great deal since its original conception. Learners no longer need to be satisfied with a meager collection of books and the knowledge of people close by. Advances in and increased access to ICTs, particularly the Internet, allow learners to access information and resources from around the world instantaneously. Rager (2006) revisited the organizing circumstance and pondered the implications of modern ICTs for self-directed learning. She suggested that the limitation is now not on the availability of resources, but rather on the learner's ability to make use of the resources and tools available (Rager, 2006).

Reflections on His Own Work

Throughout The Adult's Learning Projects, Tough noted areas for further research. Of particular interest is one section in which he speculates on resources and tools that may improve self-directed learning in the future. What was speculation in 1971 now wavers between amusing and prophetic:

> To deal with the flood of new knowledge and information, various systems using abstracts and key words are being developed. An individual may establish a profile of his interests, occupational specialties, and desired areas of information. These key words or subject matter areas are then used by an agency to determine which abstracts or news items to send him, thus weeding out much of the irrelevant material before it even reaches the learner (Tough, 1979, p. 119).

Tough went on to describe other potential resources such as machines to display continuous scrolling text controlled by foot pedals (1971, p. 119) to services that would deliver learning materials via motorcycle (p. 120). In the intervening decades, the emergence of the World Wide Web has brought to reality some of Tough's suppositions. Tough notes, "The World Wide Web somehow seems to embody the kind of things we have always talked about with self-directed learning" (Donaghy, 2005, p. 7).

Discussion

Tough's approach to the study of self-directed learning reveals a number of characteristics potentially useful for the study of informal self-directed e-learning. Firstly, Tough conceptualized learning in terms of "episodes," discrete chunks of learning that can be studied individually, or grouped together as part of a larger learning project. Secondly, the work dealt with learning as a process, and focused on the actions and decisions made by the learner. As part of this process, learners choose human and material resources to help them along the way. In general, this approach is very much focused on the learner. In reflecting on this body of work, some essential ideas about self-directed learning are revealed that may in fact stand the test of time, and could be applied to contemporary learning contexts.

Educational Connoisseurship and Criticism

The work of Elliot Eisner revolves around the paradigm of education as an art. Eisner's extensive background and involvement in the arts has led to a body of writings that explore the many parallels between artistic and educational processes. Eisner's aim as an educator was to make artistic ways of knowing an integral part of the school system (1976). Eisner encouraged educators to embrace teaching and learning as an art form, one that is guided by the unique characteristics of a situation, rather than a process that is governed by laws (1976). Over the course of his career, Eisner developed a number of constructs that help translate artistic ways of knowing into the realm of education. Perhaps his most widely known idea is that of educational connoisseurship and criticism (ec&c).

In the context of educational theory, ec&c falls under the classification of expert evaluation that "uses the role of critics in the arts as an analogy" (Alkin, 2004, p. 35). In the case of ec&c, the onus of evaluation falls on the evaluator, rather than a set of externally defined standards. Throughout his career, Eisner wrote, lectured, and discussed the notion of educational connoisseurship (1975, 1976, 1979, 1985, 1998). These ideas

have been comprehensively summarized and discussed in depth in his book, The Enlightened Eye: Qualitative Inquiry and the Enhancement of Educational Practice (1998).

Connoisseurship

Educational connoisseurship is a qualitative, empirical approach that relies on the expert observation and judgment of the observer. This approach is based on the metaphor connoisseurship in the fine arts – but instead of appreciating paintings or a dramatic performance, it is applied to the realm of education. Much of the potential power of educational connoisseurship lies in its flexibility and its ability to address highly complex and variable situations. Connoisseurship "can be displayed in any realm in which the character, import, or value of objects, situations, and performances is distributed and variable, including educational practice" (Eisner, 1998, p. 63).

The connoisseur, in this case, is the expert: "To be a connoisseur in some domain means to notice or experience the significant and often subtle qualities that constitute an act, work, or object and, typically, to be able to relate these to the contextual and antecedent conditions" (Eisner, 1992, p. 85). What makes educational connoisseurship different from other forms of evaluation is that instead of relying on an external set of criteria, the connoisseurs themselves determine the significance of what they observe. Observing details, identifying relationships, and determining significance are all part of the connoisseurial process. In order to engage in connoisseurship, the connoisseur gathers information from a variety of sources.

Information sources for educational connoisseurship

How does one gather the information necessary for the process of connoisseurship? Eisner stated, "It is important to remember that connoisseurship is aimed at understanding what is going on. Any source of data that can contribute to that end is an appropriate resource" (Eisner, 1992, p. 82). There are, however, two main sources of information for the process of connoisseurship: perception and antecedent knowledge. Connoisseurship

as a process "requires the appropriate application of criteria to the instance" (Eisner, 1998, p. 70), and education is no exception.

Perception "manifests itself in experience and is a function of the transactions between the qualities of the environment and what we bring to those qualities" (Eisner, 1998, p. 63). In order for perception to occur, two things are needed: 1) something to perceive, and 2) the ability to perceive it. The ability to perceive depends on sensory experience, which for the most part, is shared among all human beings and can act as a common basis for understanding.

Antecedent knowledge refers to previous knowledge, both general and topic-specific knowledge (Eisner, 1998, p. 66). In the case of educational connoisseurship, this includes knowledge about educational theory and past experience with the field. Antecedent knowledge can affect perception in both positive and negative ways. Background knowledge and information can provide insight and deepen our understanding of what we are observing (Eisner, 1998, pp. 64-65). It can also cloud perception with preconceived notions and labels, causing the observer to miss important details (Eisner, 1998, p. 66-67).

Eisner stressed that the most important method for data collection for educational connoisseurship is direct observation (Eisner, 1998, p. 81). In order to "make fine-grained discriminations among complex and subtle qualities", one must attend to the details and nuances of a given context as they occur and in relation to one another (Eisner, 1998, p. 63). Another important method for data collection is the interview, a chance to "talk to others and listen to what they have to say" which Eisner describes as "a powerful resource for learning how people perceive the situations in which they work" (1992, pp. 81-82).

Major Dimensions of Schooling

In his writings, Eisner acknowledged the specialized knowledge required for observing educational contexts (1988; 1998). Specifically, Eisner describes five

dimensions of schooling that address major aspects of the (formal) education process: the intentional, the structural, the curricular, the pedagogical, and the evaluative (Eisner, 1998, p. 72). These major dimensions offer a way to organize perceptions. The intentional dimension encompasses the goals, both explicit and implicit, that are formulated and applied in the classroom (p. 73). The structural dimension examines how the organization of the learning environment can affect learning outcomes (p. 74). The curricular dimension considers the quality and content of curriculum and the activities employed to communicate this content to students (p. 75). The pedagogical dimension focuses on the how of teaching: how subject matter is mediated by teachers and communicated to students (p. 77). The evaluative dimension, predictably, focuses on the evaluation of the learning process, which not only measures the success of the learning effort, but can also affect student attitudes and outlook (p. 77).

These dimensions are a structure for organizing perceptions. The combination of these dimensions results in what Eisner termed the "ecology of schooling", that is, the aggregation and interaction (and mutual dependence) of the different aspects that form the whole (1998, p. 29). Connoisseurship is, in itself, a private act. How can it be of value as a method for educational research? "If connoisseurship can be regarded as the art of appreciation, criticism can be thought of as the art of disclosure" (Eisner, 1992, p. 86).

Educational Criticism

In order to describe the purpose of educational criticism, Eisner turned to Dewey's Art as Experience: "The aim of criticism is the re-education of the perception of the work of art" (1934, p. 324)" (Eisner, 1998, p. 85). The job of the educational critic is to re-educate the perception of an educational experience or context. In order to accomplish this, the process of educational criticism depends chiefly on the use of shared language: the critic must be able to communicate his or her observations in a language that others can understand. It is not required to be a critic in order to be a connoisseur, but one must engage in connoisseurship before being able to act as a critic. As Eisner states, "Educational connoisseurship gives access to the complex and subtle aspects of

educational phenomena, and it is through such access that educational critics secure the content they need to function as critics" (Eisner, 1998, p. 86). The process of criticism involves more than simply describing or even evaluating what has been observed. Rather, criticism "takes the form of an argued narrative, supported by evidence that is never incontestable" (Eisner, 1998, p. 86). The educational critic uses the power of shared language to provide insight to educational practice.

Dimensions of Criticism

The five dimensions of schooling make up the structure to organize perception for connoisseurship. There is an equivalent structure for the process of criticism: according to Eisner, there are four dimensions of educational criticism: the descriptive, the interpretive, the evaluative, and thematics (Eisner, 1998, p. 88). Each of these dimensions can be seen as a "level" of criticism, starting with description, and moving on to interpretation, evaluation, and thematics. Each level delves deeper into the meaning and evaluation of what is being studied. Description "enables readers to visualize what a place or process is like" (Eisner, 1998, p. 89). The main goal of descriptive writing in educational criticism is to allow readers to participate vicariously in educational events and contexts. This creates a shared experience between the reader and the critic. Interpretation is concerned with explaining the meaning of an educational event, and it "frequently requires putting what has been described in a context in which its antecedent factors can be identified" (Eisner, 1998, p. 95). Evaluation, logically, involves the appraisal of what has been observed, and involves determining the quality of an educational experience (Eisner, 1998, pp. 98-103). Then final dimension, thematics, involves identifying elements that "extend beyond the situation itself", to aid in the creation of general principles that add to our general knowledge about education (Eisner, 1998, pp. 103-105). Similar to the dimensions of schooling, the dimensions of criticism make up a structure that guides the critic through the process of communicating what she or he has discovered by engaging in connoisseurship.

Validity

One of the biggest and most common questions around the application of educational connoisseurship and criticism is that of validity. How can a qualitative, subjective, expert-based form of evaluation be validated? Eisner (1998) addresses this issue by describing several approaches for identifying evidence in educational connoisseurship and criticism: structural corroboration, consensual validation, and referential adequacy.

Eisner equates structural corroboration with the process of triangulation: information from multiple sources are related and compared to each other (Eisner, 1998, p. 110). Ideally, these sources of information support each other and add validity to the interpretation expressed by the critic. Consensual validation is "agreement among competent others that the description, interpretation, evaluation, and thematics of an educational situation are right" (Eisner, 1998, p. 112). Referential adequacy refers to "the extent to which a reader is able to locate in its subject matter the qualities the critic addresses and the meanings he or she ascribes to them" (Eisner, 1998, p. 114). It is the job of the critic to make those qualities clear and accessible to the reader. These three approaches allow the critic to not only describe and evaluate educational practice, but also give evidence for his or her criticism.

Application

Eisner (1991) stated,

> I know of no 'method' for the conduct of qualitative inquiry in general or for educational criticism in particular. There is no codified body of procedures that dictates how to produce a perceptive, insightful, or illuminating study of the educational world. Unfortunately – or fortunately – in qualitative matters cookbooks ensure nothing (p. 169).

This open-mindedness regarding method is reflected in the applications of educational connoisseurship and criticism to research, which are varied and numerous. Ec&c has been applied to a wide number of areas, including: "the moral intentions of educators (Armon,1997), bullying (Bennett, 2008), second language acquisition (Jacobson, 2003),ecologically minded educators (Moroye, 2007), charter schools (Kim, 2003), global

education (Byrnes, 1993), expeditionary learning (Sharpswain, 2005) and outdoor education (Kime, 2008)" (Trousas, 2009, p. 67). It should be noted that educational connoisseurship and criticism has been applied to the investigation of various aspects of educational technology, including teacher education (Austin, 2004), technology integration (Benson, 2001), post-secondary education (Belland, 1991), and education of IT workers (Branigan, 2000).

While the application of ec&c is diverse, there are often common reasons for choosing this particular mode of inquiry. A key aspect of ec&c that is noted by researchers is the centrality of the researcher as instrument, both to collect and analyze data. As well, many of the researchers who employ ec&c make use of Eisner's two frameworks, the major dimensions of schooling and the four dimensions of criticism to organize their perceptions and ideas. This allows for the information gathered to be placed within the context of education. From these applications, it is possible to see ec&c not just as a mode of inquiry, but also an approach that contains useful structures through which analysis can be performed.

Discussion

Eisner's approach to educational connoisseurship and criticism embodies a number of qualities that make it suitable for application in complex, changing environments that are often impossible to reproduce. Ec&c focuses on the structural and environmental aspects of learning. In order to accomplish the effective observation of complex environments, emphasis is placed on detail and the relationships between the many factors present in the learning environment. In contrast to Tough's research, which depends on self-reporting on the part of the learner, Eisner advocates for direct observation of learning situations, as well as previous knowledge held by the researcher, who in this case is acting as the expert, or connoisseur. Indeed, drawing from various information sources seems to be a key aspect of connoisseurship.

In his writings on educational connoisseurship, Eisner introduces the idea of the "ecology of schooling" – the idea that the dimensions of schooling do not operate in isolation, but rather as "an ecosystem of mutual dependence" (Eisner, 1988, p. 29). The dimensions of schooling provide a structure for the observation of educational contexts, but it is important to retain a conception of these contexts as a whole.

E-Learning

The term "e-learning" has, over time, been co-opted by many groups, and the definition broadened until it is now used to refer to any learning that is mediated by technology (Canadian Council on Learning, 2009). The origin of the term is generally attributed to Jay Cross, though he himself admits that at the time, "it was in the air" (Cross, 2004, p. 106).

Corporate Roots and Computer-Based Training

E-learning as a concept had, and still has, strong ties with the corporate world. In 1984, Computer-Based Training (CBT) systems was founded with the idea of training computer professionals with computer-based training. Computer-based training consisted of training software bundled with hardware, and took place in classrooms (Cross, 2004, p. 105). As technology progressed, CD-ROMS became the medium of choice – but this still meant content that was centrally produced, static, and non-interactive. Eventually, CDs were replaced by the Web. Even then, most content was distributed through Learning Management Systems (LMS), and still under full control of the content creators. Eventually, uptake in e-learning systems started to wane. Part of the problem seemed to be that "most people simply weren't interested in learning alone" (Cross, 2004, p. 105).

Web 2.0 and the breakdown of "Traditional" E-Learning

First generation e-learning, characterized by static, centrally produced and controlled content, was being pushed aside with the emergence of Web 2.0. The term Web 2.0 has been adopted to describe a shift in both the design and use of the Web. The notion of Web 2.0 was originally put forth by Tim O'Reilly and Dale Dougherty in

response to the aftermath of the "bursting of the dot-com bubble" in 2001 (O'Reilly Media, 2005). They noted that the Web was far from dead, and the companies that survived had certain characteristics in common. These characteristics, often referred to as "design patterns", attempt to identify common principles of design that are prevalent, and successful, in this new version of the Web.

Web as platform: Perhaps the most important and pervasive characteristic is that Web 2.0 is not centralized; instead, "you can visualize Web 2.0 as a set of principles and practices that tie together a veritable solar system of sites that demonstrate some or all of these principles" (O'Reilly Media, 2009). The majority of the Web exists as a huge number of smaller niche sites and services that far outweigh the presence of even the largest sites.

Power of the network: The Web cannot exist without information. Users add data – through actively contributing to content on the Web, or revealing information in other ways. Through blogging, adding to knowledge bases like Wikipedia, providing product reviews, uploading media such as music and video, content production, like the Web itself, is not centralized. Even when users do not actively participate, they are still providing data through usage patterns. This data powers the Web, and is sometimes referred to as the new "Intel Inside" (Rollett et al, 2004; O'Reilly Media, 2009). Many large service providers work to harness that power, and often compete with one another by providing similar tools and services.

Cooperation not control: Successful Web 2.0 services and tools are characterized by an attitude of cooperation with users and other developers (O'Reilly Media, 2009). Users are demanding active participation in the development and improvement of services on the Web, as well as the ability to remix, "mashup" and otherwise modify tools to suit their needs.

Perpetual beta: Nothing is finished on Web 2.0 (Rollett et al., 2004, p. 91). Because of the sheer speed of change in this environment, traditional software testing models are

no longer appropriate. This change of pace, combined with increased user participation and investment in the development of online tools, means that the testing cycle now occurs in the public space, with public participation. Indeed, gaining early access to new tools and applications (Google Wave, for example) has become a sign of prestige online – one that is arguably encouraged by developers as an avenue for free testing and development.

Beyond a single device: Part of the decentralization of Web 2.0 is that access to tools and services online is not tied to a single device. Users can access services, and information from almost anywhere – many have access to computers at home, work, public institutions, or the Web is increasingly accessed via portable and mobile devices.

Web 2.0 is continually changing. New websites, services, tools, and resources are constantly being introduced. Keeping track of all these changes is virtually impossible. Instead, focusing on the patterns and characteristics of Web 2.0 allows us to make sense of this new environment. In much the way the Web itself has changed and continues to change, it appears that learning online is also changing.

Knowledge in the Web 2.0 environment

Interactions among people, networks and technology are key to understanding learning in Web 2.0 environments. In terms of technology application to learning and knowledge transfer, Rollett et al. (2004) turn to the framework for knowledge work developed by Efimova (2004). This framework includes the major factors of ideas, individuals, and communities & networks. This framework is particularly well suited to the Web 2.0 environment as it illustrates the interactions among users, information and networks:

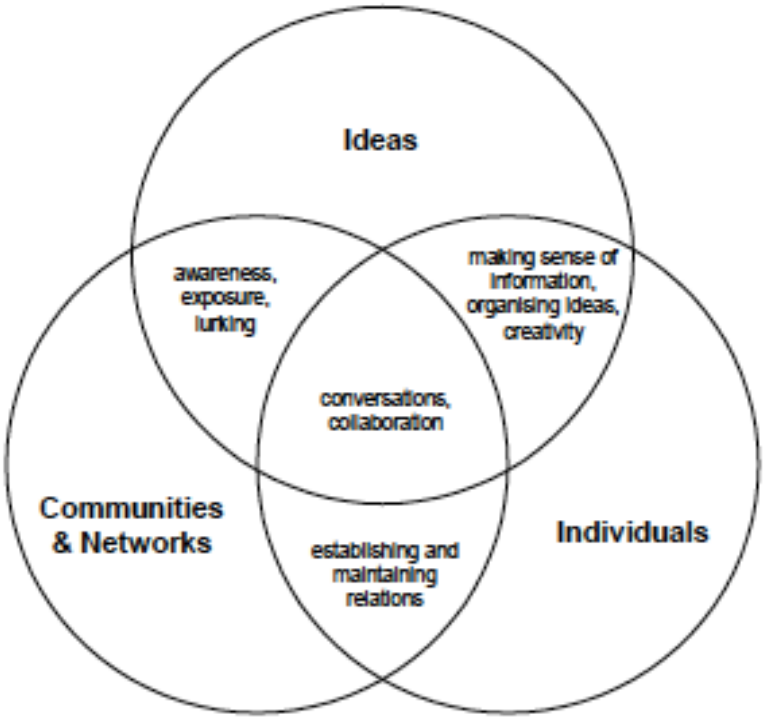

Figure 2.1 Framework for knowledge work analysis according to Efimova (2004)

Of particular interest are the intersections in the Venn diagram, which describe the variety of interactions that can arise when the three major elements of the Web interact: the user (individuals), communities & networks (users who interact with each other), and ideas (information/data). This continuous, dynamic interaction between people and information is a foundational characteristic of Web 2.0.

It is not only the technical characteristics of the Web that are changing – most of the change is reflected in the way people choose to use and interact with this environment. The term "e-learning 2.0" (Downes, 2004) has been used to describe the changes in the way people use the Web to learn. The platform characteristic of Web 2.0 bears similarity telecommunications networks – albeit that the Web is on a much larger scale (Downes, 2004). This platform is not merely a venue for consumption; the "read-

write" web allows users to easily contribute their own content (Downes, 2005). Indeed, content tends "to be used rather than read" (Downes, 2004, p. 7). The language of Web 2.0 reflects this change in that "it is more likely to resemble a language or a conversation rather than a book or manual" (Downes, 2004, p. 7). This reuse and remix quality allows learners to collect, select and modify content to suit their needs.

Personal Learning Environments

Personal Learning Environments (PLEs; also referred to as Personal Learning Networks or PLNs) are an example of how learners are using technology to take learning into their own hands. Learners create environments populated by various tools to facilitate and meet their own learning needs. Connectivism focuses on making connections as a learning activity, a necessary activity: connections between groups, individuals, and sources of information (Siemens, 2006). Information is changing at an increasingly rapid rate; knowledge is getting a shorter and shorter "half-life", creating the necessity for learners to continually identify useful information and useful information patterns. While Web 2.0 is malleable by nature, learners must adapt to its constant changes: "Learning is a process that occurs within nebulous environments of shifting core elements – not entirely under control of the individual" (Siemens, 2006, p. 4).

Summary

It seems reasonable to state that Web 2.0 is at the heart of e-learning. The Web has become a platform from which to access a growing core of data in an increasing variety of ways. Identifying design patterns allows us to describe the characteristics and structure of this environment, despite its continual and rapidly changing nature. As an avenue for learning, Web 2.0 represents a reciprocal relationship between user and environment: the environment has an impact on user action, and in turn, the user helps to shape the environment.

Conclusion

The work of Tough and Eisner is not considered "current" research – much of the work in this case is several decades old. However, each body of research contains fundamental characteristics about an approach to studying learning, and both were prescient when applied to emerging technologies. The main impetus of Tough's work, to examine the decision-making processes and help sought during the self-directed learning process, remains an important question today. Similarly, Eisner's approach focuses on the necessity for a mode of inquiry that will function in complex, rapidly changing environments – a description that matches current e-learning contexts well. Focusing on the characteristics of their work that remain relevant provides an avenue for building on established ideas to create effective tools for current educational inquiry.

This researcher believes that by building on existing research, and applying it to current e-learning contexts, it is possible to build a framework to guide the study of informal self-directed learning in online environments. This review of the ideas of Tough and Eisner reveals that both researchers make use of structures to guide and organize perceptions and understandings of a phenomenon. Tough's research focuses on the process of learning, whereas Eisner's work focuses on the environmental and structural elements of learning. A survey of the characteristics of Web 2.0 reveals a learning environment that revolves around the interactions between users, tools, and information. A tool for studying this context should contain elements that address both user action and environmental effect.

CHAPTER THREE: METHODOLOGY

Introduction

This research is an exploratory study focused on informal self-directed e-learning. As C. Wright Mills states, "The most economical way to state a problem is in such a way as to solve as much of it as possible by reasoning alone" (Mills, 1959, p. 206). If we examine our existing knowledge about educational research methods, informal self-directed learning, and e-learning carefully, and use this understanding to guide our observations of e-learning contexts, it follows that we can create a clearer picture of what we need to study in order to understand this phenomenon.

In order to accomplish the goal of increasing our understanding of informal self-directed e-learning, a hermeneutic analysis of previous research and contemporary learning contexts was performed to discover themes, patterns, and points of intersection. The ideas drawn from this analysis were used to guide the construction of a framework, which will then be applied to three illustrative scenarios.

Hermeneutics

Originally connected to the interpretation of sacred texts, the field of hermeneutics is concerned with the process of interpretation. While there are many schools of thought, hermeneutics can be divided into two broad approaches: the normative and the philosophical. Normative hermeneutics is, as the name would imply, normative – it indicates procedures and guidelines (hermeneutical canons) as to how the process of interpretation should be conducted (Gallagher, p. 55). Philosophical hermeneutics, on the other hand, does not dictate the process of interpretation, but rather describes the circumstances under which understanding and interpretation occur (Gallagher, 1992, p. 55; Gadamer, 1998, p. 295).

Gadamer and Hermeneutics

Extensive development of the notion of philosophical hermeneutics is generally attributed to German philosopher Hans-Georg Gadamer. Gadamerian hermeneutics is often described as being "positive" or the "hermeneutics of trust" (Gallagher, 1992, p. 12). This is due to some of the assumptions that Gadamer has about understanding. The most basic assumption is that it is possible to find meaning within a text (unlike radical or critical hermeneutics, which strive to break down the meaning of a text). Unlike the process of deconstruction, this style of interpretation "consists not in trying to discover the weakness of what is said, but in bringing out its real strength" (Gadamer, 1998, p. 367). The strength in language, according to Gadamer, resides in dialogue. It is through conversation that language is reanimated from its static, written form: "Conversation is a process of coming to an understanding" (Gadamer, 1998, p. 385). It is the process of reaching this understanding that is the task of hermeneutics. This notion of dialogue becomes a metaphor for the process of understanding. The dialogue may not, in fact, be literal; it can occur as a silent dialogue between the reader and the text (Smith, 2001).

When dealing with the art and process of interpretation, the question of prejudice is an important one to consider. How do the prejudices of the interpreter affect understanding? According to Gadamer, prejudices are, in fact, conditions to understanding (1998, p. 277). The key is to discern which prejudices are productive from those that are not; but to do this in advance would be contrary to the nature of philosophical hermeneutics: "He [the interpreter] cannot separate in advance the productive prejudices that enable understanding from the prejudices that hinder it and lead to misunderstandings. Rather, this separation must take place in the process of understanding itself, and hence hermeneutics must ask how that happens" (Gadamer, 1998, pp. 295-296).

In Truth and Method (1975), Gadamer questions the assumption that scientific inquiry is the only method for discovering truth. This is not to say that he rejects the notion of systematic inquiry, but rather Gadamer sees that "hermeneutics is a protection against

the abuse of method, not against methodicalness in general" (Gadamer, in Misgeld & Nicholson, 1992, p. 70).

Interpretation and application

What makes the hermeneutic approach of Gadamer "moderate" (Gallagher, 1992) is the balance that is sought between the normative aspects of interpretation, and the attention paid to specific application. While the process of interpretation may be able to provide us with insights into general issues and ideas, there is always attention paid to the specific and potentially unique characteristics of that that is being interpreted. Indeed, Gadamer maintains, "there is no separation between interpretation and application" (Gallagher, p. 150). As an example illustrating the importance of specific application, Gadamer turns to the interpretation of law: "A law does not exist in order to be understood historically, but to be concretized in its legal validity by being interpreted" (Gadamer, 1975, p. 309). The judicial system makes use of precedents, or previous specific interpretations of laws, as examples to point to. Gallagher (1992) also invites us to "consider several other examples offered by Gadamer: the interpretation of music and drama involves an application in performance" (p. 149). In other words, specific applications help to add additional meaning to the interpretive process.

Connoisseurship and Hermeneutics

It is interesting to make note of the parallels between educational connoisseurship and hermeneutical processes. In some ways, hermeneutic analysis is a form of expert evaluation similar to connoisseurship, with the interpreter acting as the connoisseur. Also similar to connoisseurship is the attention that hermeneutic analysis pays to relationships. In particular, the hermeneutic circle creates understanding from examining parts in relation to the whole, and vice versa.

Scenarios for Analysis

An important idea that has guided the structure of the framework was found in the work of Rollett, Lux, Strohmaier, Dosinger, and Tochtermann (2004), which includes a

series of “scenarios” to discuss particular aspects of e-learning. These descriptions are intended to illustrate e-learning with regard to underlying characteristics of Web 2.0, “which are not all limited to technical issues” (Rollett, et al., 2004, p. 89). While this work is based on observations of actual work with students, they do have “an explorative character”, (Rollett, et. al, 2005, p. 100). Each scenario includes a situation, which describes the education in which a Web 2.0 application was applied, a selected application, which outlines the reasons why the technology was utilized, a realization, benefits and drawbacks, which list the observed “pros and cons” of the scenario, and research questions, which is a suggestion for focused analysis based on one of the observed drawbacks or benefits. This structure bears similarities to the Major Dimensions of Schooling described by Eisner (1992, 1998).

In order to create a meaningful interpretation of informal self-directed e-learning then, it would make sense to have examples in which our previous knowledge and experience, direct observation, evaluation, and dialogue among these can function. While the work of Rollett, et al. (2004) describes observations of formal education contexts, the approach can be similarly applied to informal self-directed learning scenarios. In order to initiate a broad discussion about informal self-directed e-learning, three scenarios were constructed that incorporate Web 2.0 tools, as well as characteristics and probable applications to informal self-directed learning. The basis for these scenarios was drawn from the literature review in the areas of self-directed learning, the research of Tough and Eisner (as avenues of analysis for this type of learning), as well as the direct observation and description of the chosen e-learning tools. Each scenario revolves around a learning episode experienced by a created “character” engaging in informal self-directed learning online. In this particular application, no direct observation of participants took place. This framework will provide the means for rich, layered descriptions of informal self-directed e-learning that are comparable to situations that researchers in this area would face, resulting in a meaningful interpretation process. Within the scenarios, Eisner’s notions of consensual validation and referential adequacy were employed to help strengthen and give weight to the observations made (Eisner 1998, pp 110-112).

The scenarios were developed as illustrative examples using a number of the most ubiquitous and well-known examples of Web 2.0 technology. Rather than being based on direct observation, the scenarios have been carefully constructed using information from a variety of sources: information and ideas from literature and research on Web 2.0, personal experience using Web 2.0 tools for learning, cues from news events and popular media, as well as a certain amount of imagination and intuition. The intention of these constructed scenarios is to present what could be seen as typical manifestations of informal self-directed e-learning. To aid in providing an illustration of "typical" learning scenarios, emphasis has been placed on commonly known Web 2.0 tools, as well as common themes and ideas from self-directed learning literature. In this case the tools focused on were Google, Wikipedia and Ning. Each of these tools has been chosen because it exhibits qualities that are characteristic of Web 2.0: Google is a tool meant for searching through the seemingly endless amount of information and resources available online; Wikipedia represents a socially-constructed, continually updated storehouse of knowledge; and Ning encompasses a social networking platform that is organized into groups of interest. These three tools were paired up with three areas that, according to some research, are common topics and reasons for self-directed learning and accessing the Internet: personal health, news items and technology, and work-related learning (Canadian Council on Learning, 2009, pp. 49-52; Veenhoff, 2006; Zamaria, 2007 p. 99-100). In order to help ensure the richness and veracity of the scenario descriptions, they were subjected to external expert review by one knowledgeable in the area of e-learning (an educator instructor and e-learning manager at a post-secondary institution in the western United States), in a process that can be likened to educational connoisseurship and criticism. It should be noted that this particular connection was acquired through my own personal learning network (PLN), from a Web 2.0 social networking tool (Twitter). As an ongoing extension of this peer review process, the scenarios will also be posted as publicly editable documents on Google, and members of my PLN are invited to critique and comment on them, as well as make recommendations for revision. The assumption was that an online PLN, largely comprised of educators and already facile with social

networking tools (i.e. experts in the field, in line with the notion of educational connoisseurship), could make useful observations about the accuracy, veracity, and utility of the scenarios.

Scenario Structure

The scenarios were structured to include a description, a specific application, technological affordances, and affordances for informal self-directed learning. Each of these topics had a precise role to play in the analysis.

Description

The primary purpose of description is to provide a basis for connoisseurship and interpretation. In order to observe, and interpret, one must first perceive: "…what one can interpret depends initially on awareness" (Eisner, 1992, p. 97). More than a simple documentation of events or circumstances, an artful description can paint a rich and detailed picture of learning. Ideally, it strives for the "thick description" espoused by Geertz (1973), which penetrates the surface, and seeks to reach the implied meanings of a situation (Eisner, 1992, p. 97). Specifically, Eisner points to visualization as a source of knowing (1992), and describes the power of descriptive writing in this regard:

> Seeing in the mind's eye is not the only important effect of descriptive writing; the text should also enable readers to participate vicariously in the events described. That is, it should enable readers to get a feel for the place or process, and where possible and appropriate, for the experience of those who occupy the situation (p. 89)

The process of describing a situation does, however, involve a certain amount of interpretation. Indeed, Eisner cites description as the first step in educational criticism. The process of perception is shaped by one's previous knowledge and experience. Eisner refers to this as antecedent knowledge, which plays an essential role in connoisseurship in both positive and potentially detrimental ways (Eisner, 1992, p. 66). While a description in this case should strive to contain as much detail as possible about a learning situation, it is the job of the researcher to make choices about what is described.

The description serves as the basis for the entire scenario, and plays an important role in establishing the legitimacy of the ideas explored. The tools for establishing validity in educational connoisseurship and criticism (structural corroboration, consensual validation, and referential adequacy) all depend on having something to refer to. The description strives to contain all the salient qualities of the learning situation being described; as such it becomes the "evidence" to which the researcher points in order to "re-educate the perception" of the reader or other researchers. Consequently, the creation of a description in a clear and shared language is very important.

Specific Application

The primary purpose of specific application is to focus on the particular tool or technology chosen for learning. In other words, it answers the question "why is the learner choosing to learn about this subject in this way?" In their descriptions of e-learning scenarios, Rollett et al. (2007) point to specific applications of technologies to learning situations. With the wide array of resources available to self-directed learners through Web 2.0, choosing a specific tool or resource is no small feat, and has an effect on the overall learning process. In his research, Tough described the series of steps undertaken by learners when planning learning. The selection of resources and activities is particularly important to this process, and there are many factors involved in "Deciding the specific activities, methods, resources, or equipment for learning. As part of this preparatory step, the person could study his own particular needs, or decide the criteria to be used in selecting a particular resource" (Tough, 1971, pp. 95-96). In other words, taking into consideration why a specific tool or resource has been chosen is important in the overall analysis of a scenario.

Technological Affordances

The primary purpose of technological affordances is to focus on what a specific tool or technology can (or cannot) do. This includes factors like design, usability, accessibility, and skills or literacy required for use. For tools and resources available on

the Internet, Web 2.0 design patterns (as described in the review of the literature) outline a number of key features that are pervasive and characteristic of this type of technology (O'Reilly Media; Rollett et. al, pp. 89-92). In terms of affordances, technological affordances are actual affordances – the functioning of the technology itself, whether the user perceives them or not.

The notion of technological affordances also relates to the structural dimension described by Eisner – the idea that structural and organizational elements can affect how students learn: "Educational connoisseurs focused on the structural aspects of schooling would note how the organizational envelopes we have designed affect how education occurs" (Eisner, 1992, p. 75). While Eisner is referring to the formal classroom environment, this idea could be transferred to the realm of informal self-directed e-learning. In fact, the idea of environmental determinants to learning is echoed by Spear & Mocker (1984), who posited the notion of the organizing circumstance in response to Tough's work on self-directed learning, and again by Rager, who updates that concept "in the light of opportunities and challenges posed by the Internet" (Rager, 2006, abstract).

Affordances for Informal Self-Directed Learning

The primary purpose of affordances for informal self-directed learning is to focus on how the various factors in a learning scenario may affect the process of informal self-directed learning. These are often perceived affordances, since they rely on the perception, past knowledge, and experience of the learner – though a comparison between perceived and actual affordances for self-directed learning would provide interesting information for the potential improvement of self-directed learning resources.

This area relates to both the curricular and pedagogical dimensions of schooling described by Eisner (1992). The curricular dimension deals with how judgments are made about the significance of content (Eisner, 1992, p. 75). Not only is what is being learned itself important, but "decisions about curriculum teach students many important things besides the content" (Eisner, 1992, p. 76). This in turn relates to the pedagogical

dimension, which concerns itself with how curricula are mediated by a teacher (Eisner, 1992, p. 77). So, not only is content important, but also curricula in which it is placed, and in turn "How that mediation [of curricula] occurs has a substantial bearing on what is being taught and learned" (Eisner, 1992, p. 77). In the case of informal self-directed e-learning, content is mediated by technology, and by the learner themselves, and both factors may have a significant impact on learning.

Scenarios: Web 2.0 for Informal Self-Directed E-Learning

Three representative examples embodying common characteristics of the Web 2.0 e-learning environment, and their possible applications to informal self-directed learning, have been created to illustrate how this framework can be applied to increase our understanding of informal self-directed e-learning. These particular examples have been created using information from e-learning and self-directed learning literature, Web usage statistics and information, cues from current events, direct observation of Web 2.0 tools, and personal experience. This information has been woven together to create descriptive examples that are intentionally layered and intricate, in order to demonstrate the large number of factors researchers and educators face when observing such a complex learning environment. This analysis is intended to act as a dialogue among the literature, the learning environment, the researcher, and the reader.

The number of tools and resources available through the World Wide Web is vast and continually increasing. One of the distinguishing characteristics of Web 2.0, and consequently e-learning 2.0, is the increased capability for communication and collaborative knowledge building (Downes, 2005; Siemens, 2005; Siemens, 2008; Wiley, 2010). This is an environment where information and social tools both co-exist and interact in a variety of ways.

None of the Web 2.0 tools in this analysis are officially sanctioned, hosted or controlled by any formal educational institution, though the question of corporate control remains. However, it is important to note that the three tools presented in this analysis –

Google, Wikipedia, and Ning, all self-identify as educational resources and offer specific tools and services for this purpose – for example, Google Scholar (http://scholar.google.ca/schhp?hl=en&tab=ws), Wikipedia's Wikiversity (http://en.wikiversity.org/wiki/Wikiversity:Main_Page), and Ning's various educational communities. The learning potential of these tools is clear, yet the ways learners might use them remains somewhat elusive.

Research and surveys of Internet usage indicate that three topics are consistently among the most pursued by learners who are learning on their own: health-related information, workplace related learning, and technology (Canadian Council on Learning 2009b; Livingstone, 1999; Silver et al., 2001). Each scenario in the analysis illustrates the usage of Web 2.0 tools to learn about one of these common subjects.

The main goal of the research was to create a framework to guide the study of informal self-directed e-learning. A review of the literature, as well as exploration into the nature of hermeneutic analysis, has revealed the basis for such a model. The framework described draws influence from Eisner's Major Dimensions or "ecology" of Schooling, as well as the scenarios for e-learning presented in the work of Rollett, et al. (2004). In addition, there are connections to the work of Allen Tough around the planning and decision-making processes of self-directed learning.

In order to account for both the process and environmental determinants of informal of self-directed e-learning, the notion of affordances plays an important role in the construction of scenarios. As defined by Donald Norman, "The term affordance refers to the perceived and actual properties of the thing, primarily those fundamental properties that determine just how the thing could possibly be used" (2002, p. 9). Affordances take into account avenues for action, both perceived and actual - an important characteristic in an environment such as Web 2.0 where people and technology interact. Each learning opportunity presents different affordances. Actual affordances are what can and cannot be done in a particular environment, and are a characteristic of the environment itself.

Perceived affordances are "the mental interpretation of things, based on our past knowledge and experience applied to our perception of the things about us" (Norman, 2002, p. 9 footnote no. 3).

The structure presented here is simple – beginning with a description, it then moves to focus on specific areas as they relate to informal self-directed e-learning. Each part has a relation to the whole, creating, in effect, a hermeneutic circle wherein the specific is viewed in relation to the general and vice versa. The description serves as a canvas with each section of the model focusing in on different areas of significance. The description itself strives to contain great detail about a particular learning situation – and not all of these details will necessarily be relevant. The subsequent portions of the framework function within this description to focus on significant details that pertain to the learning process.

Conclusion

The approach to philosophical hermeneutics as described by Gadamer (1975) has been chosen to guide this research for a number of reasons. First, this study attempts to make use of changes in context as both an impetus and vehicle for the research. It has been recognized that Tough's (1979) approach to studying informal self-directed learning may no longer be appropriate for current learning contexts. But rather than reject Tough's work wholesale, this research attempts to build upon this and other existing research, making connections between different areas to reach an understanding more suited to the realm of e-learning. Similarly, Eisner's Major Dimensions of Schooling describe a number of factors that guide perception and observation of the classroom environment. In order to effectively study the realm of informal self-directed e-learning, it follows that an equivalent "ecology" based on environmental characteristics and previous research about learning would help to guide perceptions and observations.

There are a number of desired outcomes from the analysis. Firstly, the analysis is intended to test the relevance of this new application of the ideas drawn from the work of

Tough and Eisner. More specifically, this includes: addressing the question of whether or not the notion of learning episodes and projects is still appropriate for describing and understanding self-directed learning in contemporary e-learning contexts; and, discovering the applicability of the methods of educational connoisseurship and criticism to this type of learning environment. As well, the inclusion of a meta analysis of all three scenarios is intended to draw out overarching themes and ideas that can be applied to our overall understanding of informal self-directed e-learning. This process can be seen as being similar to Eisner's notion of "thematics" (Eisner, 1998, pp. 103-105).

CHAPTER FOUR: ANALYSIS

In this section, three discrete scenarios are presented and analyzed using the framework described in the previous chapter. Following the structure of the framework, each scenario is presented as a descriptive vignette, and then discussed in terms of its specific application, its technological affordances, and the affordances for informal self-directed e-learning. Following this, a meta analysis was drawn comparing the findings of each scenario, and identifying possible patterns and themes that may provide insight into the nature of informal self-directed e-learning.

It is important to note that this particular application of the framework was in fact a form of self-study, and did not include direct observation or interviews with live participants (see Appendix A: Ethics clearance). Instead, the analysis presents an application that illustrates the capability of the framework to incorporate information and observation from a variety of sources, including previous research, current and past events, and personal experience. The implications of this approach are discussed in the conclusions chapter.

Scenario no. 1: Google – Searching for Health

Description

It's late evening, and a solitary woman settles in front of her computer. The house is dark and quiet; everyone else is asleep. But she is awake, and looking for answers. She's been feeling "off" for months. Tired, sore, trouble sleeping… The symptoms seem so general – who would go to the doctor just to say that they're tired? But something is wrong, and she is hoping to find more information. But where to start? She opens a web browser and brings up the Google homepage. She shrugs to herself and starts typing: "symptoms" "sore joints" "tired" "sleepless". She tries a number of search terms and phrases, and different combinations, rarely venturing beyond the first page of results. The pages bring up a variety of information, from swine flu to pregnancy to arthritis. She notes

that there are several results relating to chronic fatigue syndrome. She looks at a few of the pages, which include medical information sites, some of which she is not sure she trusts, discussion forums, and one site that just turns out to be a spam page – or at least, it looks less than legitimate. It's full of ads, and finding actual information on the page is difficult. She decides to search specifically for chronic fatigue syndrome. These results look slightly more informative, with a Wikipedia article being the first result. She glances at the clock, dismayed at how late it is. Her mind revolving around the information she has found, she shuts down her computer and returns to bed.

The next evening she tries again, armed with some new information. After talking with a friend about the previous night's search, she may have found a specific answer to her problem. For a moment, she regrets not writing the term down – she is unsure of the spelling. She makes a guess, and is pleased to see that Google's autocomplete suggests what she is looking for after she has entered the first few letters: f… i… b… "Fibromyalgia" She thinks, "yes, that's what my friend mentioned". She is once again faced with a page of results. As with other searches, Google also yields image results, displaying an array of photographs and diagrams. Once again, the first "hit" is a Wikipedia article. On the first page she also sees results from the Mayo clinic, and the web site for a fibromyalgia support group in Ottawa, all of which appear to have potentially useful information. She takes notes, thinking that it is time to make an appointment with her family doctor. She remains somewhat conflicted – while the information she has found has helped clarify some of her concerns, she isn't sure if she should share her findings with her doctor. What would he think about her looking up symptoms on the Internet? She has no medical training, and it's possible that what she is doing may only make the situation worse – like that old saying – "A little bit of knowledge is a dangerous thing". At the same time, she feels like she should have some kind of ownership – after all, this is *her* health at stake.

Specific Application

Why use Google specifically to search for health-related information? The answer to this may lie in the fact that there is no social pressure or expectation with Google; the

lack of an obvious human presence can prompt users to "treat Google like their best friend" (NBC, "Inside the Mind of Google"). When dealing with potentially sensitive subjects like personal health, learners may prefer to choose a tool or resource that does not involve direct interaction with others.

A search engine like Google allows users to begin searching for information with simple words and phrases. In the case of health related information, a collection of related terms (a list of symptoms, for example) can serve as a starting point. From there, users can further refine their searches, repeating the process until the desired information is found.

Technological Affordances

Google's mission is "to organize the world's information and make it universally accessible and useful" (Google, 2010, "Company Overview"). The term "google" has become a verb, synonymous with searching (American Dialect Society, 2003). In order to achieve this focus, designers at Google have made simplicity their mainstay ("Inside the Mind of Google, 2010). Google is known for its visually simple homepage: the company logo, a few unobtrusive links, and the search box itself. When a Google homepage is first loaded, many of the links remain hidden until the user moves the cursor (see fig. 4.2a, b). The interface itself, being initially entirely text-based, places emphasis on the information that is being made available to the user.

Figure 4.1a, b. Google homepage, with hidden and revealed links.

A technical feature that makes Google different from other search engines is the PageRank algorithm, developed by Google co-founder Larry Page. Rather than relying simply on a frequency count of words in web pages, PageRank looks instead at the links between web pages. If more web pages link to one page in particular, it gains a higher PageRank. This in turn gives high-ranking pages a stronger "vote" when they link to other pages (Google, 2010; Wikipedia, 2010). This ranking system is not based strictly on site content (as with many other search engines), but also on the importance given by creators

and users to each web page, in the form of hyperlinks. So, while Google's focus remains on making information easily accessible, the filtering of that information is driven by the creators and users of the Web.

Affordances for IFSDL

Search engines like Google may be an appealing first resource for many learners. The first advantage is availability: as of May 22, 2010, Google makes up 72% of the (U.S.) search engine market share (Hitwise, via SEO Consultants Directory, 2010). A contributing factor to Google's ubiquity is that there are Google search capabilities built directly into many Web browsers, including Firefox and Safari.

There are increasing number of types of resources and information available through Google: web pages, images, news stories, videos, books, scholarly articles, etc. This variety may appeal to users of different learning styles, education and literacy (technical, information, reading) levels. A feature that may aid learners with different literacy levels is Google's autocomplete. When entering search terms, users are presented with a list of potential search terms that alters with each letter typed (Fig. 4.3). A similar feature is the "Did you mean" and "Searches related to" sections, both of which make suggestions based on a comparison between given search terms and their most likely results (Willison, 2004).

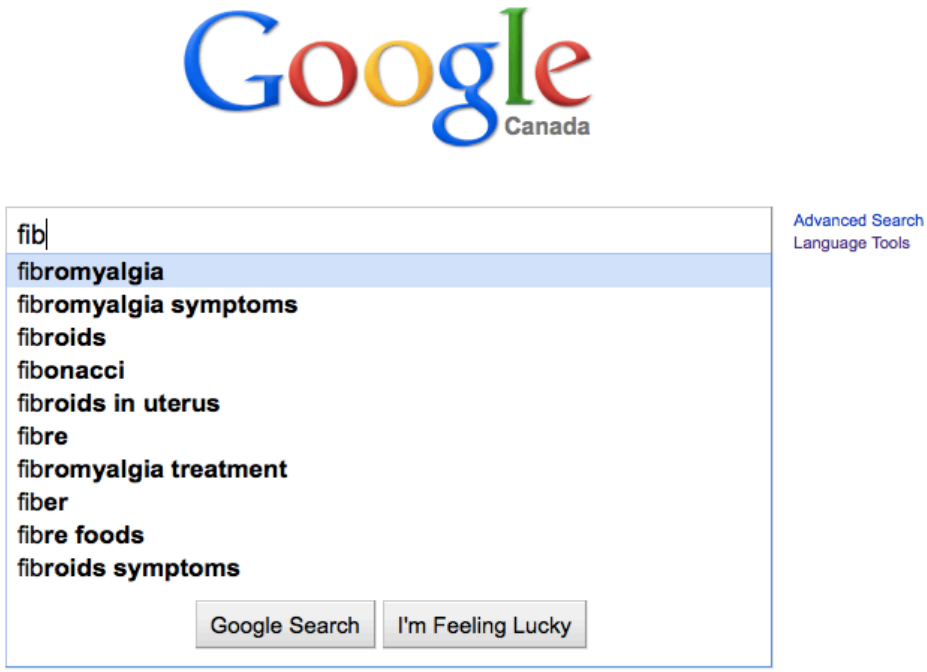

Figure 4.2. Google interface, with autocomplete

http://www.google.ca (May 12, 2010)

A third source of appeal for learners may be that a search engine Google takes little preparation to use: One simply needs a computer with Internet access, a common feature in many households and public institutions. The process of opening a browser, typing in search terms and getting results can take as little as seconds.

Discussion

One of Google's greatest affordances is its accessibility – users can access this tool quickly and easily, making it a tool with the potential to satisfy immediate learning needs in a private setting, if desired. In terms of further research, the notion of trust is one that raises many questions: How much do learners trust search engine results? Why? What is the basis for this trust?

As a starting point, Google may be used as a tool to gather resources and information for further learning. As part of the "organizing circumstance", Google affords access to a massive variety of information. How do users filter this information for their own uses? How do learners determine the quality of the resources they are presented with? Would increased literacy (both technical and information) help learners make better use of search engines as a learning tool?

This scenario illustrated the use of a search engine tool to find a particular type of information. Do search engine tools like Google lend themselves to a particular kind of learning, a particular kind of learner, or to a particular stage in the learning process?

Scenario no. 2: Wikipedia – Learning about our world

Description

A group of friends (who are currently attending University together) are hanging out on a Saturday afternoon, talking, surfing, and catching up on current events. While perusing CNN's website on his laptop, one member of the group notices something interesting: "Hey, YouTube is blocked in China". The following dialogue ensues:
"Really? Why?"
"I dunno, it doesn't say"
"But how can they even do that?"
"I'm going to look this up on Wikipedia"

Nearby, on his desktop computer, one friend chooses the Wikipedia option in his browser's search bar, and types in "youtube". Not to be left out, another member of the group uses her cell phone to access Wikipedia's mobile site to look at the article at the same time.

"Who owns YouTube, anyway?" one asks. "Those guys must be loaded. I bet they live in a castle or something!"

"It says here that YouTube was founded by a couple of guys who used to work for PayPal. No way! Either way they would be rolling in it – hey look at the picture of YouTube headquarters. Pretty sweet."

Undaunted, one member of the group continues to read through the article, hoping to find answer to their question. He finds a section titled "Blocking", which links to an article titled "Blocking of Youtube". He clicks on the link, and is directed to the article "Censorship of YouTube". The article has two notices at the top of the page, indicating that the article may need to be updated and that it may contain unverified information. He scrolls past this and down to the content of the article. In the "contents" section, he sees a list of YouTube blocking by country, and chooses "People's Republic of China" out of that list. He is brought down through the article to the appropriate section, where he finds a short section that answers the question, at least partially: YouTube was (and continues to be) blocked in mainland China because it included videos of Chinese soldiers beating Tibetans, including monks. He shares this information with his friends. For a while, the groups discusses the technical and social aspects of how and why a country might block something like that, and what people living there might think about it:

"How can a country block internet sites? Can't you just get to anything by typing it in the address bar? Or Google?"

"Maybe the government owns all of the ISPs"

"I still don't get it…"

"Well, think about how the Internet works at the University – when you go online at school, there's that agreement thing about 'appropriate usage'. Obviously they have some way of knowing and controlling what we look at there."

"But who gets to decide what pages are blocked in a whole country? Is there a committee or something?"

"Is there some way to get around that? Is there some kind of black market Internet where stuff isn't blocked?"

The original searcher turns his attention back to Wikipedia: "Apparently there's a whole article about Internet censorship in China, too". He goes to the article, and the rest of the group quickly pursues that line of inquiry, googling "internet censorship china", which results in links to other sites and news items. He sees in the left sidebar that this article is part of a series on censorship. The sidebar contains a series of hyperlinks related to censorship, organized into sections. He reads some of the headings to the group, and discussion ensues: "Heckling is a method of censorship? I thought heckling was making fun of people…"

"Bleeping is a word?"

"What's a memory hole?"

With their interest piqued, the group members all return to the Wikipedia article to see what their friend is talking about. From there, each person finds something of interest and moves away from the original topic, finding other areas of interest and new things to learn about.

Specific Application

Wikipedia represents a wealth of information that is quickly and continually updated. Each article represents research conducted by one or usually more users, and is comprised of information collected from a number of primary resources that are cited and can often be accessed directly from the article itself. Unlike traditional encyclopedias, Wikipedia is updated continually, and within a short time span, often within minutes of news or events. Patterns in Wikipedia usage often coincide with current events or media: one example is an increase in hits on the article about Ernie Davis while a documentary about the football player was airing on HBO (Oshiro, 2010).

Technological Affordances

Wikipedia, like all wikis, is technologically very simple. Ward Cunningham, the designer of the first wiki software, describes the tool as "the simplest online database that could possibly work" (Wikipedia, "wiki", 2010). Simply put, wikis are web pages that include an edit button: when clicked, the page becomes editable, through directly

changing the page code or through a WYSIWYG editor. When finished, users hit "save" and the page becomes static once more – until the next edit. Wikipedia makes heavy use of hypertext – text with inline links or references to other documents that users can access immediately, if they so choose (Wikipedia, 2010). These hyperlinks exist both as relative links to other Wikipedia articles, as well as links to original sources elsewhere on the Web.

While technologically simple, Wikipedia has a complex set of community guidelines. These guidelines are intended to ensure that information is presented in a consistent format that adheres to community standards. Evidence of this community is visible in Wikipedia's user options. Users do not need to be logged in to the site to view or edit Wikipedia articles. However, all edits to entries are recorded and can be viewed as versions, allowing users to see the history of any particular document on the site. If a user does choose to log in, he or she gains a number of benefits, including increased editing capabilities, being identified by username (rather than IP address), and the ability to add to Wikipedia's knowledge store by creating new pages (Wikipedia, 2010c).

Affordances for IFSDL

Wikipedia allows for the quick satisfaction of curiosity. Much like using a search engine, the process of retrieving information from Wikipedia can take very little time – seconds, even. Wikipedia provides learners with the opportunity to access a wide variety of information from a single, consistently formatted source. It also links information in a way that can lead users from one article to another.

It is clear through the design of the site that Wikipedia enforces standards for the information included in this resource. Any article that may not meet those standards is marked as such (see fig. 4.4, Wikipedia content warnings). It is possible that this consistency and clarity in communication engenders trust in users, making Wikipedia as a trustworthy source of information.

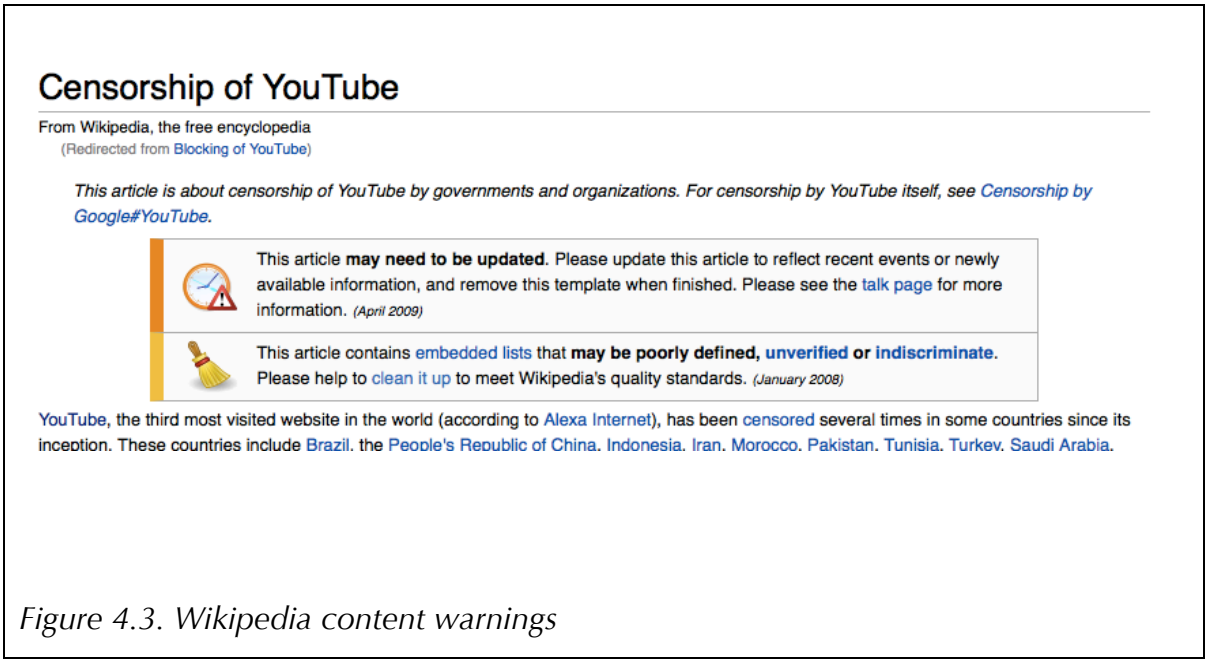

Figure 4.3. Wikipedia content warnings

While the information on Wikipedia is available elsewhere and Wikipedia itself discourages its use as a primary resource (Wikipedia: Guidelines, 2010), articles present a collection and summary of sources, which are referenced, and often available for direct access if desired. This may be appealing for learners who want to gain a general understanding about a topic before undertaking more in-depth research.

Discussion

The Wikipedia scenario focuses on learning that makes use of collaboratively created bodies of knowledge – something that is becoming increasingly common in the realm of Web 2.0. There are a number of characteristics that may make Wikipedia so popular as a learning resource.

One of the most interesting topics for further research that arises from examination of this resource is that of trust: Why would learners trust Wikipedia? There are a number of potential answers. Learners may find Wikipedia appealing as an up-do-date resource because it is being updated on a daily, even hourly basis, unlike other media like books, which often remain static for years. Wikipedia's standards result in information that is

consistently formatted, which may increase learner trust: when users open this site, they know what they are getting. Beyond formatting and presentation, Wikipedia represents trust in a community. Why do users trust a collaboratively created body of knowledge?

Scenario no. 3: Ning – (net)Work learning

Description

It's lunchtime and a project manager for an engineering firm decides to eat at his desk and catch up on the happenings in his field. He belongs to several networks through the Ning platform, in the areas of project management and engineering. The engineering project managers group on projectmanagers.net has a reasonable amount of members, but sees very little activity. The Engineering Exchange allows him to keep up-to-date on more specific field-related developments and ideas, though there is very little information or discussion about project management. He browses both sites, moving back and forth between the two, without any particular goal in mind – he simply wants to see what's been going on.

He checks the project management forum on the Engineering Exchange and sees that there has been no recent activity. Somewhat disappointed, he decides to look into the projectmanagers.net engineering project management group. He is once again disappointed; despite having over 150 members, no one is participating in the discussion forums. Backing out to the projectmanagers.net homepage, he looks at recent activity. He briefly wonders why people would post what appear to be vacation pictures on this kind of site – isn't this supposed to be for work related things? He is interested to see a featured blog post about the agile/scrum approach, something he has been considering using with his working group. The blog post is interesting, albeit it fairly short. He makes a mental note to look up more on this topic later, when he has some time.

He returns to his Ning dashboard and goes back to the Engineering Exchange. From the homepage, he watches a posted video about drafting in Auto CAD. He is interested to

see that the video is part of a series, but there are no links to the other videos on the page. After the video has finished playing, he realized it's on YouTube. Maybe if he looks at that video page, he can find the rest. Sure enough, when he clicks through the rest of the series is listed alongside the original video. He spends some time looking at the other videos, but realizing that time is passing, he bookmarks the page, intending to return at a later time.

Once again returning to the Engineering Exchange homepage, he looks at what has been happening in the mechanical engineering forum. He sees a thread about designing for prototypes vs. manufacturing – a forum member has asked if people created designs for both purposes, or if they combine the two. It's an interesting question, and there have been a few responses. He briefly considers adding his own post, but decides to do it later. He finishes his lunch, mildly annoyed at the crumbs in his keyboard, and wonders if the past hour might have been better spent away from his desk.

The phone rings – he glances at the clock and sees that it is already after 1, and realizes it's time to get back to work.

Specific Application

Users log in and are greeted with the Ning homepage, which includes a list of "nings", or communities, to which the user belongs. The platform allows users to create, in essence, a personal learning environment that consists of a network of networks that is accessible from a central point – the ning dashboard.

The phrase "keeping up" is often associated with workplace related learning. A platform that emphasizes up-to-date information from peers may fulfill that need. Ning allows for users affiliated by profession to connect, even if they are separated by geographical distance.

Technological Affordances

On a ning homepage, users are greeted with an array of information, most of it related to recent activity and posted content in the ning. User profile updates, blog postings, photos, and events are among the information that first greets users when they enter a ning. Each ning boasts similar features: forums, blog posts, videos, pictures, member profiles and events. Ning is a representative example of the importance of platforms in Web 2.0 design. It acts as an access point for information and social interaction.

It is possible to easily integrate other social networking and media sites such as Twitter, YouTube, or Facebook into a ning site. A significant amount of the information and media on ning sites is drawn from elsewhere – personal blogs, media hosting sites, newsletter distribution and others, depending on what the creators of the ning have chosen. This integration of tools allows users to communicate with one another in a variety of ways. The inclusion of a variety of media – writing, video and audio files, discussion boards, etc. may appeal to different learning styles.

Affordances for IFSDL

Social networking platforms like ning allow learners to connect to others who have a shared interest. The organization of nings acts as a type of filter – if you belong to a particular ning, chances are others in the network share the same interest and possibly background as you. Depending on the size of the ning, there may be sub groups within the network devoted to increasingly specific areas.

Ning allows learners who are separated geographically to connect online. Ning allows learners to connect to multiple networks from one place, creating in essence a personal social learning environment tailored to the learner's needs.

Discussion

The Ning scenario focuses on socially focused learning. This scenario reveals potential questions around participation in online communities. The main character of this scenario opted out of contributing to the communities to which he belongs, at least this time. Why? Is participation in communities a necessary part of the learning process in this type of context? Does it enrich learning? What are the differences between learners who create content and those who consume it?

This scenario potentially illustrates an example of learning without clearly defined goals. Some workplace related learning might very well be characterized by phrases like "keeping up" or "seeing what's going on". Surely not all examples of informal self-directed e-learning would be deemed "successful" by learners or researchers; this is one such case. How can a metric for success be developed for informal self-directed e-learning? Observations of a variety of scenarios, including those that learners and researchers may view as unsuccessful, may provide some insight into this area.

Meta Analysis

The application of the framework to several scenarios allows us to draw out a number of themes and ideas that may provide insight into the nature of informal self-directed e-learning. This is achieved by observing recurring ideas, and comparing the differences between examples. These themes are intended to extend beyond the specific situation itself (Eisner, 1998, p. 103). Following are a number of ideas that emerged out of the three scenarios presented in this chapter.

The ability to capture discrete "chunks" of learning in this fashion indicates that the notion of learning episodes (and subsequently learning projects) is still a useful and relevant way to describe self-directed learning. Indeed, informal self-directed e-learning seems particularly episodic in nature; it addresses an immediate question or need, and may or may not be part of a larger learning project or goal. The scenario structure was created to capture instances of learning with a clear beginning and end. Capturing these

natural beginning and ending points, and placing them within the larger context of the learner's life provides its own type of insight into the learning process, particularly in the case of informal self-directed learning.

A related idea is the notion of "just in time" learning. In all three cases the Internet acts as an immediately available resource to address learners needs and questions. In the case of the Wikipedia scenario, a question of curiosity could be addressed quickly and easily. The other two scenarios are indications of how informal self-directed e-learning can be fit within the learner's schedule, depending on the nature of the learning being pursued. For example, the ning scenario depicted a learner pursuing work-related learning the course of his working day. The woman in the Google scenario found the time away from both work and family to pursue information about a personal issue. In this way, the daily lives of learners become part of the organizing circumstance – one that Web 2.0 addresses in a powerful way. The Internet is always on – learners can access it at any time they choose. This in itself allows for new opportunities in learning that did not previously exist.

The organizing circumstance is an idea that has changed from its original conception. However, environmental determinants are still a powerful influence on the way people learn, perhaps now more than ever. Learners have access to a vast variety of resources and information that is available immediately with little effort. All three scenarios are instances of social interactions that guide learning. While using Google is at first glance a straightforward search for information, the learner in this case modified her search after discussion with a friend. In the Wikipedia scenario, the learning itself became a social activity, with the process being affected as a result of the interactions between learners. The Ning scenario is an example of an online social platform that allows learners to connect and interact with one another. The importance of social interaction in the self-directed learning process was one of the key factors in Tough's work on the subject, and it appears that this idea remains as important as ever.

While specific application (in the form of a specific tool or resource) is part of the framework, the analysis revealed the deeply intertwined and interconnected nature of Web 2.0 tools (which reinforces findings in the literature). It appears that the power of Web 2.0 tools for learning lies in the ability to connect people, tools, and information in a variety of ways. While Google itself has become one of the hallmarks of Web 2.0, its very function is to bring to the user all of the information and resources available on the Web. Wikipedia functions in a similar way, to act as a storehouse for collaboratively collected knowledge. Ning is a platform, with all that the word implies – different tools and resources from all over the web are brought together. While in some ways addressing the notion of a specific application may seem misguided, it does serve to keep the focus on one very important question: why does the learner choose to pursue learning in this particular way? Even when the learner makes use of a number of resources, identifying that "first stop" may be important in understanding the learning process.

CHAPTER FIVE: CONCLUSIONS

Reflections and Observation on the Analysis

The goal of this research was to create a framework to guide the study of informal self-directed e-learning. More specifically, the framework was constructed using ideas from the research of Tough and Eisner, with the intention of applying these ideas in a contemporary learning context, to increase our understanding of informal self-directed e-learning.

The scenario structure itself is reminiscent of Tough's notion of learning episodes: smaller, discrete "chunks" of learning (Tough, 1971, p. 8). There is the potential to expand scenario descriptions into full learning projects – clearly related episodes that culminate in the achievement of larger learning goals. In this case, the analysis succeeded in capturing episodes – a period of time devoted to a specific (learning) activity, with a definite beginning and end (Tough, 1971, p. 7). Indeed, these scenarios are particularly episodic in nature in that they may or may not be a part of larger learning projects. Continued application of the framework with this in mind may help to expand the notion of learning episodes to include this type of smaller-scale learning.

Collecting and combining information from a variety of sources is an important characteristic of Web 2.0, and is also essential to the process of educational connoisseurship. The results of the analyses do indicate that direct observation and interviews remain part of the research process when using this framework; direct observation and interviews would add an increased level of veracity, and provide external validity checks that are useful as part of the connoisseurial process. However, the inclusion of multiple sources of information helps to add depth and veracity to the scenarios, as well as being a valuable research exercise in and of itself. While it may never be possible to truly capture the experience of the informal self-directed learner, this form of expert evaluation and inquiry may provide a venue for new research in this area.

The exploration of several scenarios has revealed a number of different facets of informal self-directed e-learning that could serve as avenues for further research. Some of the general trends are reflections of the nature of Web 2.0: resources are ubiquitous and easily accessed; many tools and platforms integrate with each other and bring together information from a variety of sources; and users play an active role in the creation as well as the consumption of content. The intention of uncovering these themes is to find ideas that are applicable beyond specific situations and give insight into this type of learning as a whole. The inclusion of this meta analysis becomes a key factor in getting the full value out of the application of the framework.

Reflection on the Creation of the Scenarios

In the creation of the preceding scenarios, I relied on a number of sources for information. Rather than employ tools like direct observation or interviews, I drew information from research, drew cues from current events, personal experience, and direct observation of Web 2.0 technology, tools and services. I found myself engaging in a creative process, creating characters and trying to imagine what their learning experiences would be like. The creation of the scenarios brought me face-to-face with many questions: Who are the learners? What are they learning about? Why? How do they make choices about their learning process? In order to "re-educate the perceptions of others" (Dewey, 1934; in Eisner 1998, p. 85), it is necessary to write convincingly; I believe that this approach is one that would require practice for many researchers, myself included.

It would be remiss to avoid confronting the fact that the findings of the analysis may be a reflection of the way that the scenarios were constructed (particularly in this case, where there was no direct observation). While this may be true to a certain extent, I would argue that the *process* of creating rich, believable scenarios is in itself a worthwhile research exercise. In creating each description, I found myself asking countless questions about the details of this kind of learning. I found myself recreating certain aspects (for example, recreating Google searches and following links; finding out how long it takes to access information, carefully observing the layout and content of websites, etc.). As well, I

sought out sources from news items, technical reports and websites in order to ensure that the descriptions were accurate. I believe that combining this process with direct observation and interviews with learners has the potential to create valuable descriptions about learning.

By choosing Web 2.0 learning tools as a starting point, I needed to move from the general to the specific in order to create descriptive scenarios; in retrospect, this may not have been the best approach. In many ways what I have done is create what is akin to a series of thought experiments in informal self-directed e-learning – proposed scenarios that may or may not illuminate the subject. While I firmly believe there is value in this approach, I am not wholly convinced that this is the best application of the framework. It feels as though there is an element missing: after all, the purpose of descriptive writing in this case is to illuminate the reality of a particular learning context.

As if to underline the continually changing nature of Web 2.0, the tools studied in the analysis have undergone changes over the course of this research. In particular, Ning made an announcement that they will be phasing out its free services (McDonald, 2010) which at the time of this writing, is having a significant impact on the educational groups who had previously relied on this service. Many are now looking for alternatives, and will no longer be using Ning (Couros, 2010; Ning Creators forum,2010; O'Dell, 2010). As well, both Google and Wikipedia have made changes (albeit subtle ones) to their design, raising questions about how changes in the design and function of these sites will impact learning.

Context Driven Approach

In the constant and rapidly changing environment of contemporary e-learning, new research methods and tools are needed to meet the challenge of a changing context. The emergence of Web 2.0 was marked by a shift in design practices; this research presents a method that takes its cues from those practices to create a framework that is suitable for the study of learning in this environment.

Exploratory Research

A distinct advantage to this approach is that it can be applied at exploratory phases of research. It can help to further discover, refine and clarify research questions; it can serve to satisfy initial exploration and curiosity without losing the structure of a systematic approach. Using the description as a canvas, the researcher can then choose to focus on elements that he or she deems significant to that particular context.

Direct Observation

Perhaps the biggest challenge around this type of research, and research into the area of informal self-directed learning in general, revolves around direct observation. Eisner stresses the importance of direct observation in the connoisseurial process – but how much direct observation is possible with informal self-directed learning? Similarly, Tough's research presents some of the difficulties associated with self-reporting on learning (Tough, 1971).

In much the same way that users of the Web provide information inadvertently, learners can provide us with insights into learning without directly telling researchers. The difficulty in relying on self-reporting to examine the learning process may be somewhat circumvented by an approach that uses information from a variety of sources (as described in the methodology section of this study), as opposed to relying solely on the learner.

Notes on Application for Researchers

When using this type of research tool, there are a number of things to keep in mind. Perhaps the most important notion is to use this framework in a way that is of service to you as a researcher. The framework itself is purposefully simple: the key thing to remember about this tool is that it must be applied in a way that is meaningful to your specific research context and lines of inquiry – including a shared language with those to whom you wish to communicate your observations and findings.

In order to create a rich description of educational phenomena, it is important to gather information from a variety of sources. As described in the analysis, this can include direct observation, interviews, literature from the field, and personal experience. Use your creativity and imagination – not in the creation of fancy, but to create potent descriptions that communicate a sense of the learning experience. Descriptive language can communicate in powerful ways – conveying information about context, mood, and motive that goes beyond a simple account. With this in mind, pay attention to nuance and details! This can provide valuable insight that others observing similar phenomena might miss.

When continuing in the creation of a scenario, it is important to make clear the association between your observations and the original description. This allows readers to follow your train of thought and verify the significance of your evaluation. As a researcher, it is your job to determine and draw attention to the details and patterns that may be significant to the learning process.

Reflections on Informal, Self-Directed Learning Informed by the Analysis

A qualitative analysis of how informal self-directed learning functions in Web 2.0 presents some interesting ideas that may help shape our broader understanding of this type of learning. While it may be impossible (and indeed not even appropriate) to separate the influence of a particular environment on a learning process, viewing how informal self-directed learning functions within a particular environment may provide clues about facilitating this type of learning in general.

The episodic nature of informal self-directed e-learning is, I believe, an important characteristic. Learning of this type is by nature fit into the daily life and routines of the learner. What is missing is a way to acknowledge and include smaller scale, incidental learning that may or may not be part of a larger learning "project". Tough included what he admitted were arbitrary requirements for the necessity of a learning project (Tough, 1971) for the sake of his study.

From this analysis, it becomes clear that informal self-directed learning in Web 2.0 environments can be a very social activity. Indeed, socialization (in the form of shared curiosity and discussion) can be the impetus for learning – as is the case in the Wikipedia scenario. Interactions appear to be essential to the process of informal self-directed e-learning: learners interact with the Web as a resource; with each other via the Web; and with others in their social milieu, which consequently influences the way they access the Web as a resource. Here, questions about trust and social currency come to the forefront: why do learners choose certain resources over others? Why would they trust certain "experts" online to whom they have no previous connection? Are the opinions and ideas of social contacts from the "real world" milieu of greater import? It is clear that social interaction is an important aspect of this type of learning.

The Internet has a unique influence on informal self-directed learning – and influence that works both ways. Users are drawn to the Internet as a vast, rich, continually updated and (perhaps most importantly) easy to access resource. With the advent of Web 2.0, users now also have the ability to contribute to and shape this resource. This continuous cycle of interaction brings to light some potentially interesting questions around the consuming of and contributing to learning. Chiefly among them is the notion that in the realm of self-directed learning, many are not simply consumers of information; they often add to the general pool of knowledge as well (an act that is widely encouraged in Web 2.0 environments). Do give and take play equal roles in informal self-directed learning? Indeed, could reciprocity be considered a measure of success or health of the learning community at large? While the "participation mystique" of the Web has not yet been fully understood, its presence and impact on learning cannot be denied.

Using the structure of an ecology of learning similar to the one developed by Eisner allows us to focus on different aspects of a very complex and continually changing learning environment in turn. The framework developed in this research revolves largely around the interactions between the learner and the learning environment, in the form of

various affordances. I believe that the most revealing application of the framework is comparing perceived and actual affordances – when learners have access to a nearly limitless information resource, why do they choose the path they do? This is, perhaps, the ultimate question in informal self-directed learning.

Next Steps for Research

The next essential step for this research is, of course, continued application in a variety of contexts by other researchers. As a flexible framework, it will be possible for researchers to create scenarios describing informal self-directed e-learning using information from a variety of sources including direct observation, interviews, previous research, and personal experience – engaging in the process of connoisseurship and criticism.

Collaboration lies at the heart of Web 2.0. This framework presents the potential for researchers and learners to work together collaboratively to create a picture of informal self-directed e-learning. Tough notes the difficulty in relying on self-reporting by learners, and how this can lead to the necessity for extensive (and potentially leading) probing in the interview process (Donaghy, 2005; Tough, 1971). In a collaborative process, researchers as experts may be able to act as connoisseurs and critics to aid learners in creating accurate and rich descriptions of learning. A parallel example of this type of collaboration would be an author collaborating in the writing of a biography or event.

As described earlier, one of the greatest potential strengths of this framework is the ability to apply it at early exploratory stages of research. A logical next step would be to integrate the use of this framework into the larger research process. What questions will arise out of the use of this framework? How will those questions facilitate the design of further research? There is also potential for this framework to be applied as part of the action research process – as a comparative tool to observe changes over time. Similarly, this research could be used as a way of studying the discrepancies between perceived and

actual affordances, which may reveal ways to improve learning resources and tools for informal self-directed learners online.

This framework could be useful for researchers who are interested in the study of informal self-directed e-learning, but need something that will aid in the clarification of ideas and research questions. The act of using this framework could help to hone one of the most essential research skills: the ability to describe the characteristics and qualities of what is observed. Web 2.0 is a phenomenon that is protean by nature: what it will look like in a year, or ten years, is completely unknown. Indeed, e-learning and Web 2.0 as we describe it today may not even exist. What will remain is the need for research tools that allow us to continually view learning with fresh eyes. It is my hope that this framework may be one such contribution.

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APPENDIX A: ETHICS APPROVAL

October 4, 2010

Dr. John Rigby
Chair, Behavioural Research Ethics Board
Room 80
PotashCorp Centre
25 Campus Drive
Saskatoon, SK S7N 5A7

Dr. Rigby –

This letter is to advise the Behavioural Research Ethics Board of the research being conducted by M.Ed candidate Jaymie Koroluk in partial fulfillment of the requirements for the degree of Master of Education in the department of Curriculum Studies.

The thesis (working title: An Ecology of E-Learning: A framework to guide the study of informal self-directed e-learning), does not involve any human subjects, and as such does not require ethics review as stipulated in the Beh-REB submission guidelines. Please see the attached abstract for a brief description of the study.

If you or any members of Board have any questions or concerns, please do not hesitate to direct correspondence to the addresses below.

Sincerely,

Dr. Richard Schwier, Professor (Supervisor)
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To: Richard Schwier, Department of Curriculum Studies University of Saskatchewan
Jaymie Koroluk, Department of Curriculum Studies University of Saskatchewan

Date: October 6, 2010

Re: An Ecology of E-Learning A framework to guide the study of informal self-directed e-learning

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Thank you for submitting the description of your research project. This memorandum certifies that your project is exempt from the ethics review process. This exemption is based on the fact that the work you are doing falls under the category of program evaluation/improvement. This decision is based on the information provided to the Research Ethics Office on October 4, 2010.

It should be noted that though your project is exempt of ethics review, your project should be conducted in an ethical manner (i.e. in accordance with the information that you submitted). It should also be noted that any deviation from the original methodology and/or research question should be brought to the attention of the Behavioral Research Ethics Board for further review.

Sincerely,

Dr. John Rigby, Chair
Behavioural Research Ethics Board
University of Saskatchewan